

DOCUMENT RESUME

ED 159 852

EC 112 182

AUTHOR Weisgerter, Robert, Ed.
 TITLE Vocational Education: Teaching the Handicapped in Regular Classes.
 INSTITUTION Council for Exceptional Children, Reston, Va.
 SPONS AGENCY Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C.
 PUB DATE 78
 NOTE 89p.
 AVAILABLE FROM Council for Exceptional Children, Publication Sales Unit, 1920 Association Drive, Reston, Virginia 22091 (\$8.50, Publication No. 179)
 EDRS PRICE MF-\$0.83 Plus Postage. EC Not Available from EDRS.
 DESCRIPTORS *Handicapped Children; *Individualized Instruction; *Inservice Teacher Education; Language Handicapped; *Mainstreaming; Mentally Handicapped; Special Health Problems; Visually Handicapped; *Vocational Education

ABSTRACT

Divided into 7 units, the book provides vocational educational teachers with inservice training on practical knowledge and work skills for working with mainstreamed handicapped students. Unit 1 explores the rights of the handicapped, the capabilities and characteristics of the handicapped, training for competitive employment, shaping the training environment, evaluating the program. Attitudes that can affect success in teaching mainstreamed handicapped students are discussed in unit 2. Units 3,4,5, and 6 deal with individualized instruction for health impaired students, visually handicapped students, mentally retarded students, and students with communications disorders respectively. A plan for action is presented in unit 7, outlining steps for instruction of a specific topic to a specific student. (FHR)

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VOCATIONAL EDUCATION:

Teaching the Handicapped in Regular Classes

Robert Weisgerber, Editor

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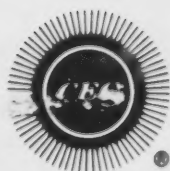
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Published in 1978 by The Council for Exceptional Children, 1920 Association Drive, Reston, Virginia 22091.

Library of Congress Number 78-68174

This publication was partially developed under a grant from the Bureau of Occupational and Adult Education, US Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the policy of the US Office of Education and no official endorsement by the US Office of Education should be inferred.

Printed in the United States of America.

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PREFACE

As a result of changing legal and sociological concepts, regular classes are now regarded as the most appropriate and beneficial setting for many of our handicapped youth. This new view applies to vocational as well as academic instruction. Vocational educators, therefore, are being called upon to provide practical knowledge and work skills to a new and heretofore unlikely group of students—the handicapped. The goal is to help these students become self sufficient, productive members of their communities.

To carry out this new assignment, vocational instructors are finding a need for inservice training materials covering unfamiliar areas. This book was prepared to help meet that need. The publication is designed to familiarize instructors with: (a) federal policy and program support for handicapped students, (b) the concept of the regular class being the least restrictive environment for many students, (c) the importance of a success oriented climate for learning, (d) special considerations relative to four major disabilities (orthopedic and health impairment, visual impairment, mental retardation, and communication impairment), and (e) the steps involved in developing individualized instruction for these students. Lists of selected publications are provided at the end of each unit to aid those readers who want to investigate certain areas in greater detail.

The material in this book is drawn from a series developed by the American Institute for Research in cooperation with the California State Department of Education. Funding was provided by the Bureau of Occupational and Adult Education of the US Office of Education.

Charlotte Hawkins-Shepard
The Council for Exceptional Children

UNIT 1

Developing a General Understanding Robert Weisgerber

Rights of the Handicapped

Capabilities and Characteristics
of Handicapped Persons

Training the Handicapped for
Competitive Employment

Shaping the Training
Environment

Evaluation

RIGHTS OF THE HANDICAPPED

Human Rights

Every individual should be afforded the chance to lead a full and rewarding life with the personal dignity that comes from possessing useful skills and having a chance to apply them in productive work. Vast numbers of handicapped persons have passed through their formative years without the educational and vocational experience that would have prepared them for useful places in society. They have been denied entry into training opportunities because their potential was underestimated. Fortunately, this situation is changing rapidly. Reflecting a change in American values, there has been a general movement to end the practices of isolation and neglect of exceptional individuals. This has been evidenced by federal policy supporting right to education and treatment, court decisions guaranteeing the right to treatment, and legislative mandates for a free appropriate public education for all handicapped children and youth.

Federal and state programs are giving increased support to education of the handicapped and are providing resources and support services for schools. Federal and state legislation can be applied to good advantage in the vocational training of handicapped young people. A portion of the vocational funds authorized at the federal level are to be spent for students with "special needs." Local and state agencies are given flexibility in determining how these monies will be allocated and how instructional programs should be modified to accommodate individual differences. Basically, funds may be used to adapt existing vocational training programs, or to provide separate instruction should that appear necessary.

Developing Individual Potential

Is there a flaw in this statement?

Handicapped students should receive training for jobs that are selected on the basis of what handicapped persons like themselves have done before.

in answering this question, consider the importance of individual differences.

Employment

The law does not allow discrimination against the handicapped in employment. Moreover, there is a growing awareness that handicapped persons have greater potential than has been realized. Therefore, the vocational educator should keep an open mind about the occupational areas a handicapped person can best pursue. The vocational educator can serve students' needs by (a) helping to explore options related to particular vocations, (b) helping to develop appropriate job skills, and (c) advising students on problems that are likely to arise.

Expectations and Goal Setting

The effect of vocational education is broader than vocational development alone. The classroom offers each student an opportunity to engage in (a) interpersonal relationships, (b) positive work experiences, and (c) practical learning experiences. The vocational educator has always provided these opportunities for nonhandicapped students and should do the same for handicapped learners.

Frequently vocational educators become confused about maintaining high quality standards and still serving handicapped individuals. The following characterizes a most frequent dilemma:

Argument: There are standards to maintain in a program. Vocational education has to guard against lowering those standards if its graduates are to be certified as competent and ready for work.

Rebuttal: Standards are rules set by authoritative decision and make no allowance for individual differences. The world of work does allow for individual differences. In fact, it thrives on them. Perhaps you should be thinking of criteria instead of standards, for criteria are a way of describing quality performance according to what can be done, not what *must* be done.

Factors Influencing Performance

Factors that influence student performance include individually set reasonable goals, the student's skills at entry, and appropriate expectations. Resource people who can assist in expanding programs and services for exceptional students include:

- Special educators, professionally trained to educate handicapped students.
- Classroom aides, who are invaluable when special assistance during class hours or tutorial help outside of class is necessary.
- Occupational therapists, who can assist in matching the physical and occupational potential of the student to appropriate educational goals.
- Rehabilitation counselors, who provide a valuable link to resources, specialized training, and postschool vocational followup leading to employment.
- Parents, who can help educators make decisions because of their special understanding of their child.
- Employers, who are key figures in on the job success.
- Vocational committees, which may be composed of subcommittees for the handicapped, or may have handicapped persons as committee members. Committees are most helpful in attracting broad community support that community educators and handicapped students need.
- Volunteers, who are valuable resources and should be organized to supplement other resources available to students in school and community.

- Medical personnel, who are as much interested in preventing medical problems as in curing them, and can give advice on the feasibility of tasks for handicapped students at school, in the world of work, and in the community.

Federal Policy and Program Support

Public policy at all levels of government mandates appropriate education of all handicapped children and requires that handicapped children be included in regular vocational education programs whenever possible.

The Education for All Handicapped Children Act of 1975 (Public Law 94-142)

This law is a broad based mandate for a free appropriate public education for all handicapped persons aged 3 to 21 years. The law, which revised Part B of the Education Amendments of 1974 (Public Law 93-380), embodies the major features of federal commitment to handicapped children and youth.

Public Law 94-142's major purposes, listed by The Council for Exceptional Children in *Public Law 94-142 and Section 504—Understanding what they are and are not* (Ballard, 1977, p. 1) are:

- To guarantee the availability of special education programming to handicapped children and youth who require it.
- To assure fairness and appropriateness in decision making about providing special education to handicapped children and youth.
- To establish clear management and auditing requirements and procedures regarding special education at all levels of government.
- To financially assist the efforts of state and local government through the use of federal funds.

Public Law 94-142 specifies that each handicapped child is to receive education services in a manner consistent with the individual's unique educational needs. This will require education agencies to offer a continuum of special services that will range from adaptations of a regular classroom setting, to special classes, and when necessary, residential programs. In any case, placement must be in the least restrictive environment that is appropriate for each child.

A written individualized education program (IEP) is required by Public Law 94-142. It serves as a management tool in structuring education services and must be developed for each handicapped child served. The IEP must specify the education and related services that are to be provided and must describe the student's present levels of educational performance, annual goals, short term objectives, the procedures to be followed, and a schedule for evaluating student progress at least once a year. The law further requires that the following people be involved in developing the IEP:

A representative of the local educational agency or an intermediate educational unit who shall be

qualified to provide, or supervise the provision of, specially designed instruction to meet the unique needs of handicapped children, the teacher, the parents or guardian of such child, and, whenever appropriate, such child . . . (20 U.S.C. 1402).

In other segments of federal public policy, there are mandated individualized programs. The Developmentally Disabled Assistance and Bill of Rights Act of 1975, (Public Law 94-103), requires individualized habilitation programs. The IEP is specifically cited in regulations for Section 504 of the Vocational Rehabilitation Act of 1973 as "one means" of meeting the standard of a free appropriate public education.

The largest single fiscal commitment to handicapped children is represented by Public Law 94-142. It authorizes a payment formula based on a gradually escalating percentage of the national average expenditure per public school child times the number of handicapped children receiving publicly financed special education and related services in each state. That percentage will escalate each year until 1982, when it will be permanently established at 40%.

<u>Formula Scale</u>	<u>Percent</u>
Fiscal 1978	5
Fiscal 1979	10
Fiscal 1980	20
Fiscal 1981	30
Fiscal 1982	40

The Vocational Rehabilitation Act of 1973 (Public Law 93-112)

This law and its 1974 Amendments (Public Law 93-516) extend and revise authorization of grants for vocational rehabilitation services to states. Once a handicapped individual's potential for placement is established, the individual can receive many forms of assistance through the rehabilitation counselor, who acts as liaison to the various branches of services. First priority is given to the severely handicapped. Emphasis is placed on interagency cooperation, on the elimination of facility and transportation barriers, and on the development of individual rehabilitation plans for each client.

Section 504 of the Vocational Rehabilitation Act is a civil rights statute and contains no specific authorization for funds. However, it furthers the interests of handicapped persons by identifying their vocational and social needs and by emphasizing the fact that education and human service facilities must be accessible to handicapped people for purposes of employment. Section 504, although contained in the Rehabilitation Act of 1973, has broader implications than rehabilitation alone. It is a civil rights provision prohibiting the discrimination against the handicapped and has significance for access to all programs for handicapped persons.

Vocational Education Legislation

The Vocational Education Act of 1963 (Public Law 88-210) authorized federal grants to states to improve

vocational programs. This act was amended by the Vocational Education Amendments of 1968 (Public Law 90-576), and then revised by the Education Amendments of 1976 (Public Law 94-482) which call for the expansion and strengthening of vocational education programs for handicapped students.

A 10% portion of the state's allotment is to be set aside to pay 50% of the cost of vocational education for handicapped persons. Public Law 94-482 requires that the set aside funds be used in ways that are entirely consistent with the state plan submitted pursuant to section

613(a) of the Education of the Handicapped Act. However, these funds may be used in a number of ways, depending on local needs and priorities. (See Table 1.1).

The Comprehensive Employment and Training Act of 1973 (CETA)

This is another important federal program that can be of direct assistance to unemployed handicapped persons.

TABLE 1.1: Programs and Services Covered by Federal Legislation and Earmarked for Vocational Education Funds

1. Surveys by contract or by staff members to identify:
 - Handicapped population;
 - Methods, materials, equipment, and techniques utilized in providing vocational education programs, services, and activities for handicapped persons;
 - Occupational opportunities available to the handicapped;
 - Other agencies, organizations, and individuals concerned with and knowledgeable about education of handicapped persons;
 - The extent of vocational preparation being provided by other agencies and organizations;
 - Areas in which programs are needed, such as geographic areas, population groups, and manpower needs.
2. Recruitment and promotional activities designed to reach handicapped persons, potential employers, and potential teachers and to develop community participation and support.
3. Scheduling modifications that require:
 - Additional faculty time;
 - Extended school days, weeks, or years that require additional faculty time and other related expenses;
 - Individual instruction.
4. Formation and servicing of an advisory committee for the handicapped.
5. Formation of and participation in activities of coordinating committees, including requirements for travel expenses, additional time of assigned faculty member, and additional clerical expenses.
6. Modifications of the regular program:
 - Special equipment and facilities modification necessary for handicapped persons if they are to succeed in regular vocational programs, including purchase, repair, and maintenance. May include (a) special materials or signal systems; (b) ramps, handrails, and modified work stations; and (c) simplified equipment and alternative controls for equipment.
 - Curriculum modifications for individual students that may involve additional expenditures such as (a) additional time allotments needed for skill development, (b) special workbooks and/or textbooks, and (c) task analysis.
 - Educational services that supplement regular programs and are specifically needed because of the handicapping condition. These include:
 - a. Psychological services; testing, evaluation, and consultation services in addition to those provided to nonhandicapped students;
 - b. Reader services for the visually handicapped;
 - c. Guide services to lead handicapped students to class, restroom, bus, etc.;
 - d. Interpreter services for the deaf;
 - e. Tutorial services;
 - f. Teacher training activities;
 - g. Vocational orientation for handicapped persons;
 - h. Remedial education;
 - i. Educational specialists, speech therapists, teachers of the deaf, teachers of the blind, etc.;
 - j. Consultation services that may require extra time for meetings with parents;
 - k. Job placement coordinators, job finding, placement, and employment followup services;
 - l. Program and curriculum development;
 - m. Guidance and counseling services in addition to those provided to nonhandicapped students;
 - n. Transportation services in addition to those provided to the nonhandicapped;
 - o. Rental of classroom and office space;
 - p. Minor remodeling and alteration of previously completed building space; and
 - q. Contracts with private agencies for program services and activities the local educational agency cannot provide.

CETA (Public Law 93-263) is intended as flexible, broad purposed legislation, and seeks to encourage maximum employment for target special needs groups through locally administered programs. It provides for on the job training for moderately handicapped individuals who need to further develop their skills.

In addition, administrators may want to explore the possibility of using CETA funds to add additional staff to support further direct services to clients. Because rehabilitation services emphasize the more severely handicapped, CETA and rehabilitation services perform a complementary function (Urban Management Consultants, 1976). Further information on CETA can be obtained from the Department of Labor.

CAPABILITIES AND CHARACTERISTICS OF HANDICAPPED PERSONS

It is characteristic of handicapped persons that by the time they reach adolescence, they require a structured educational experience. This must include prevocational skills and job awareness that will allow them to realize the same potential as their nonhandicapped counterparts.

Definition of Handicapped

Current federal legislation provides two definitions of *handicapped*. The Education for All Handicapped Children Act of 1975 defines *handicapped children* as "mentally retarded, hard of hearing, deaf, speech impaired, visually handicapped, seriously emotionally disturbed, orthopedically impaired, or other health impaired, or children with specific learning disabilities, who by reason thereof require special education and related services." (20, USC 1401). Section 504 regulations define a *handicapped person* as any person who "1) has a physical or mental impairment which substantially limits one or more major life activities, 2) has a record of such an impairment, or 3) is regarded as having such an impairment."

It is important to remember that labels, regardless of their origin, do not provide enough educational information on which to base plans for appropriate programs for handicapped students. For example, there will be large variations in areas such as the speech production capability of deaf persons, the awareness of surroundings and the mobility skills of the blind, the strength and dexterity of the orthopedically handicapped, and the kinds of tasks that can be learned by the mentally retarded.

Provisions for Handicapped

Appropriate adaptations to ensure the success of handicapped students, include:

- Medical or therapeutic correction and treatment.
- Technological devices, such as motorized wheelchairs, hearing aids, reading devices, and electronic feedback mechanisms.
- Personal services, such as interpreters, counselors, and provision of assistive devices.

- Environmental alterations, including ramps, modified work stations, or special jigs.
- Training in adaptive techniques and methods of achieving particular tasks.

As a new drafting class reports for instruction, the teacher realizes that a paraplegic student cannot get the wheelchair under the drafting table and cannot reach the supply cabinet. What action or actions might be appropriate? (Consider the five alternatives listed above.)

Taking a Positive Approach

One hears more and more about remarkable achievements by handicapped persons. Sometimes these border on the heroic; more often, they are achievements born of great patience, perseverance, and a positive attitude. Beethoven was deaf, yet composed exquisite music; Roosevelt was paralyzed, but led the country in wartime; Ed Furgol had a shortened, rigid left arm, but won the US Open Golf Championship. The public is becoming increasingly aware of the potential of handicapped individuals. The press has reported the accomplishments of many, among them:

- Ed Roberts, a quadriplegic, has been the energetic leader of the California State Department of Rehabilitation.
- Celestine Tate, who has no limbs, has proven in court that she can care for her baby.
- Kirk Stephenson earned a restricted pilot's license, demonstrating that deafness does not present obstacles that need prohibit activities such as flying.
- Gordon Gund, a blind man, is a skier, a world traveler, director of two banks, and an executive in a large business development firm.
- Tracy Reynolds, who is blind, graduated from high school with honors a year ahead of her class—she skis avidly and says, "I consider my blindness an inconvenience rather than a handicap." This point of view is shared by many handicapped persons.

A positive attitude is crucial. It is fostered by the encouragement of friends and relatives and is the product of the handicapped person's willingness to attempt new tasks and of the accomplishment of concrete daily goals. Small gains are extremely important to the handicapped person in building self confidence and self esteem. The vocational educator may not always know when the handicapped person has done something for the first time, and should be quick to acknowledge any student effort that reflects individual growth. (See Figure 1.1.)

TRAINING THE HANDICAPPED FOR COMPETITIVE EMPLOYMENT

To be effective, a vocational training program for handicapped persons should include:

- Establishment of realistic goals, based on individual needs.

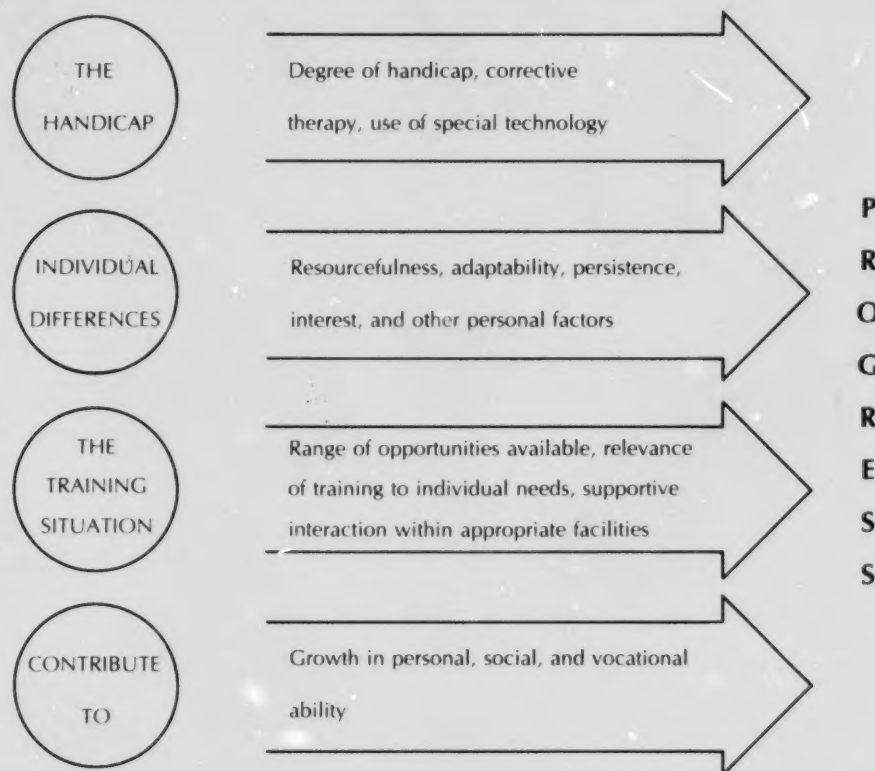


Figure 1.1: The Route to Individual Growth.

- Cooperative planning of activities by school district staff, advisory committees, employers, and other concerned parties.
- Matching student readiness to vocational opportunities, emphasizing career awareness, prevocational orientation, vocational skills building, work exploration, and job placement.
- Adequate provision for program components, including personnel, facilities, equipment, and curriculum alternatives.
- Evaluation of program effectiveness.

Obviously, the key factors in the success of vocational programs for the handicapped are the same as those of any regular vocational program. Many handicapped persons can be served within regular vocational programs. However, experience shows that handicapped students, more than nonhandicapped, may need programs including:

- Development of prevocational knowledge and attitudes.
- Pretraining skill assessment.
- Assistance in program planning and positive reinforcement during vocational counseling.
- Class opportunities that lead to feelings of achievement rather than failure.

- Placement in favorable work study or work experience stations.
- Coordination and followup with other staff, especially the special education teacher, and with work station supervisors.

Review the above list. Suggest other needs related to goal setting and to social interaction.

Cooperative Planning

Cooperative planning is both appropriate and necessary.

Each school district probably already has an established vocational advisory committee, which should include representative leaders in business, industry, civic affairs, and agriculture as well as parents, educators, school administrators, and an advocate for the handicapped. The advisory committee is an excellent source of information; members can sense the pulse of the community and suggest areas that the school's vocational program should emphasize in order to smooth the transition from school to community. This group can attract wide community support and foster a receptive attitude in the job market.

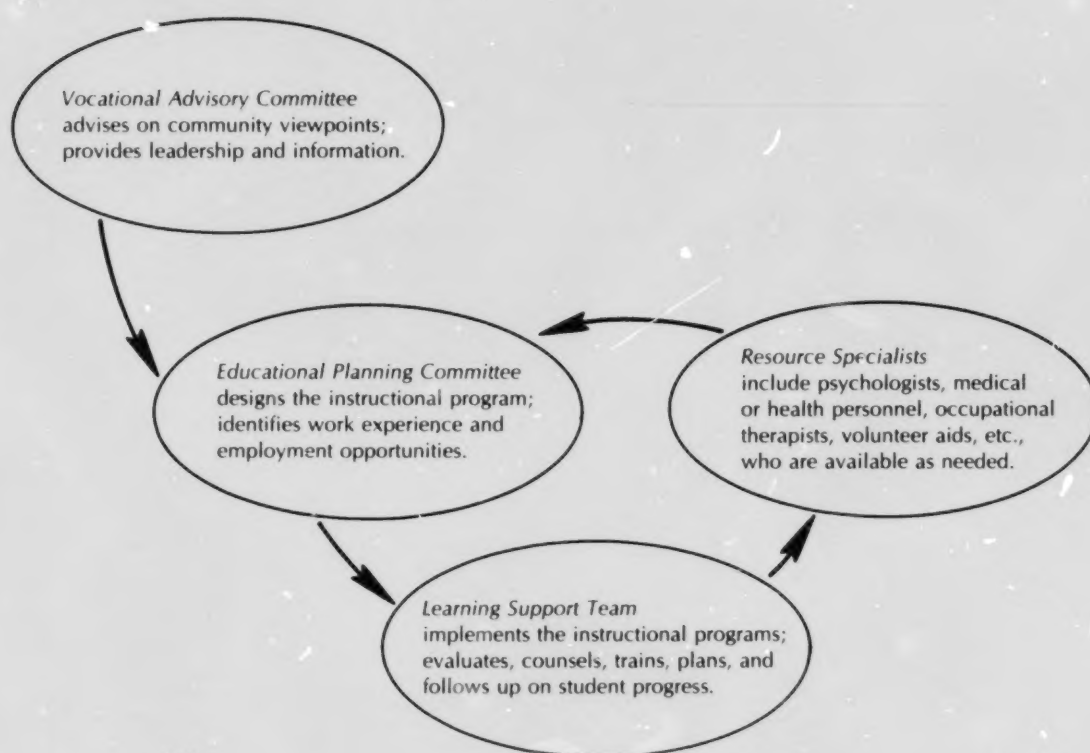


FIGURE 1.2: Interrelationships and Continuity of the Vocational Advisory Committee, the Educational Planning Committee, and the Learning Support Team, plus the Resource Specialists.

An educational planning committee should also be concerned with curriculum development. In order to provide meaningful programs for the handicapped, this group should include vocational educator(s), a school administrator, a special educator, and a work experience or work study coordinator. It may benefit from representation by employers, rehabilitation counselors, or others who will later interact directly with students.

The learning support team should also cooperate in program planning. Its members should include people whose work responsibilities involve helping students increase employment potential. The name of this group has important meaning. *Learning* (as opposed to instruction) shows that the emphasis is on student development; *support* acknowledges that relationships are collaborative and helpful; and *team* implies concerted effort in a common direction. The membership of this group is similar to that of the planning committee, although the school administrator may not be regularly involved.

Figure 1.2 illustrates the interrelationships and continuity of the three coordinating groups. A pool of resource specialists has been added. Although they do not usually meet with any of the three groups, such specialists can prove helpful in different stages of program implementation.

Development of Prevocational Knowledge and Attitudes

Early in their school years, handicapped youngsters should become aware of career opportunities through discussion, reading, field trips, films and slides, guest speakers, and visits to workers on the job. Orientation to the world of work should take place throughout the curriculum. By the time students leave high school, they should be aware of job alternatives within the following 15 job clusters:

Agribusiness and	Health
Natural Resources	Leisure (Recreation,
Business and Office	Hospitality, Tourism)
Communications and Media	Manufacturing
Construction	Marketing and
Consumer and Homemaking	Distribution
Public Service	Marine Science
Fine Arts and Humanities	Transportation
Environment	Personal Services

For many students, career planning and vocational preparation will seem vague and even a bit frightening. After all, school is something known, while earning a

living is little more than a remote prospect for the future. The message to convey is simple—the more students know about choices, the more satisfied they will be with decisions they make about them.

In addition to overall career awareness, prevocational orientation emphasizes such important factors as:

- Personal and social skills that affect employability, such as communicating effectively and developing good work habits.
- Daily living skills, including such avocational areas as cooking and serving and managing personal resources.
- Process skills related to seeking employment, such as filling out forms and using public transportation.
- Special skills related to each student's handicap, including the use of special aids and appliances to accomplish tasks.
- Basic vocational skills that involve math, reading, and perceptual or manipulative abilities.

Vocational educators should not assume that the handicapped student knows much about career options. If the student has had little orientation to the world of work before attending the vocational education class, the educator should take extra time to explain, in simple language, how the student's career potential can be enhanced in that class.

Career awareness centers and vocational exploration classes provide opportunities for both handicapped and nonhandicapped youngsters to improve their understanding of the world of work and the alternatives open to them. These early experiences can acquaint the youngsters with what other people do and what kinds of skills are needed for a particular vocation or career.

Students may become interested in a vocation for which they have little aptitude or limited skills on which to build. This may be especially true for handicapped students. The school's purpose is not to close off options, but to open them, and the place to begin is with pretraining assessment. This is the next concrete step to be taken in a structured vocational program. In approaching the pretraining assessment, it is important to remember that both handicapped and nonhandicapped students differ widely in interests, knowledge about the world of work, and ability to exercise good judgment about what the future holds for them. It is also important to be careful not to underestimate the handicapped student, nor add to the student's self doubts.

Pretraining Skill Assessment

As handicapped youngsters enter the vocational program, the following basic information should be gathered about each student:

- Scholastic aptitude and achievement.
- Social and emotional maturity.
- Personal interests and aspirations.
- Health and welfare.
- Family and close friends.

Much of this information can be provided by the special education teacher; some will be a natural result of conversations with students and their parents.

The vocational educator will be even more concerned with evaluations of general work readiness and performance on meaningful work tasks, which have direct bearing on vocational preparation.

General work readiness involves students' ability to:

- Receive and follow directions.
- Understand and follow safety rules.
- Work independently.
- Maintain reasonable attendance and punctuality.

In considering work tasks, the vocational educator needs to establish the following performance factors:

- The variety of manipulative tasks the student can perform.
- The rate at which the student can do various manipulative tasks.
- The neatness, consistency, and accuracy demonstrated in those tasks.
- The student's physical stamina.
- The student's ability to reason and make decisions about relatively complex tasks.

Performance factors are important in assessing what the handicapped student can do. If the handicapped person fails to perform a task as requested, the educator should make sure that nonperformance was not a result of confusion about directions or of an emotional block stemming from the test situation.

Assessment Using Commercially Available Evaluation Systems

Where vocational education programs operate on a large scale, with many course alternatives, work sample evaluations are often made with one of the commercially available systems. Many such systems were originally developed to assess the employability of the disadvantaged. Some were developed with particular handicapped populations in mind. Even where this was not the case, major portions of these commercial evaluation systems can often be used with the handicapped, although, as the term implies, norms for the different systems are apt to be inappropriate.

The Singer Vocational Evaluation System is used for handicapped as well as nonhandicapped students. The system can be supplemented by locally developed work sample stations tailored to specific vocational training courses (e.g., upholstering) in the curriculum. In a high school facility at Fullerton, California, another commercial performance assessment system, Valpar, is being used increasingly with handicapped students. One widely known work sample evaluation system developed for use with the handicapped is the Testing Orientation and Work Evaluation in Rehabilitation (TOWER) system. Other well known commercially available evaluation systems include the Jewish Employment and Vocational Service (JEVS), which is organized by worker trait group

according to the *Dictionary of Occupational Titles* (DOT) (US Department of Labor, 1965) and applies to the mentally retarded; and the Wide-Range Employment Sample Test (WREST), which is used with both mentally and physically handicapped persons.*

What do the evaluation systems cover? JEVS measures potential skills in 14 general industrial categories: assembly-disassembly, bindery, clerical, display and printing, electrical, industrial housekeeping, layout design and drafting, mailroom, mechanical, packing, sorting, structural development, textile and tailoring, and metal work.

The Singer evaluation system covers 20 occupational clusters: basic tools, bench assembly, drafting, electrical wiring, plumbing and pipe fitting, carpentry and wood-working, refrigeration-heating-air conditioning, soldering and welding, office and sales clerk, needle trades, masonry, sheet metal work, cooking and baking, small engine service, medical service, cosmetology, data calculation and recording, soil testing, sample making, and electronic assembly.

A number of vocational aptitude tests assess particular abilities, such as dexterity, eye-hand coordination, and visual and auditory acuity. Selection of tests in these areas should be tempered by consideration of the relationship between the disability and the job requirements and should be jointly selected with the special education teacher.

Equally important is the need to know the students' vocational interests. While the Strong and the Kuder tests have been widely used, others may be more appropriate for certain handicapped persons. The Reading-Free Vocational Interest Inventory and the Vocational Interest and Vocational Assessment tests, which are essentially pictorial, may be more useful for the mentally retarded.

Locally Developed Assessment Systems

Unlike the commercial systems and published tests, many local vocational programs have found it expedient and worthwhile to develop prevocational assessment procedures that are geared to their own students and their own curriculum. Locally developed systems are apt to be easy to use and more meaningful to the instructor.

Identifying Appropriate Training Experiences

After completing the pretraining assessment, the vocational educator should arrange a series of informal vocational counseling sessions with the student. In these sessions the instructor should guard against raising false hopes. It is better to emphasize that employers want

people who can do quality work and do it reliably and that the potential revealed in the pretraining assessment and the training available in class can qualify the student to many employers' satisfaction.

To help the student understand what is ahead, the instructor should describe the kinds of jobs that have been obtained by graduates of the vocational program. This discussion should provide an opportunity to instill enthusiasm in the student.

The instructor should also explain the sequence of vocational courses the student might take. This can be done in terms of goals and outcomes. Students should know why they are taking a particular course and what gains to expect from it.

Program planning for the handicapped student is not the sole responsibility of the vocational educator. The special educator, through a multidisciplinary approach, has the primary responsibility for deciding when the handicapped student is ready for a particular course and when the student is ready to be integrated with regular students. Coordination of informal counseling with that of the school counselor will help to prevent confusion and contradiction and to ensure support and reinforcement as the student works toward realizable goals.

Work Study, Work Experience, Work Placement, and Followup

All four of these procedures are extremely important for the handicapped student. They give the student an opportunity to apply newly learned skills to practical work tasks in increasingly realistic job environments.

Work Study

The work study program, in which special educators are heavily involved, provides close supervision and acquaints the handicapped student with relatively simple jobs. It introduces the student to common work requirements, such as setting time limits on production and working with others in a team.

Work Experience

While work study is tailored primarily to the handicapped, those students in a work experience program gain a feeling of achievement by carrying out job tasks essentially similar to those of nonhandicapped persons. The handicapped student learns not only to be competitive with nonhandicapped students but also to cope with unforeseen events and with different persons encountered on the job.

Work Placement

Work placement involves a transition from learning to earning during which the handicapped person begins to function as a self sustaining individual in society.

Often job placement is arranged prior to graduation. Sometimes it has been facilitated by the vocational educator, who may know the employer. It may have been arranged through a placement system developed by the

*Readers interested in learning more about these commercially available evaluation systems are referred to State Department units for Vocational Education. A description of the various systems and critical appraisal of their uses can be found in Donn Brolin's comprehensive text, *Vocational Preparation of Retarded Citizens* (Brolin, 1976).

vocational advisory council or through efforts and contacts initiated by the student. In many instances the employer will be apt to look to the school for evidence that the handicapped person is capable of performing the tasks required. As in school, the student's positive accomplishments should be emphasized, not the disability. Of course, the employer will need to know what to do to function effectively in working with the handicapped student. Since new cooperating employers have a lot to learn themselves, it is prudent to send capable students to them first—students who require minimal attention, are reliable, and are a credit to the school's training program.

There is a remarkable range of vocational opportunities for handicapped youngsters, but these opportunities must be sought out. The school must support each individual in making a smooth transition into the world of work. Whether students are leaving high school, junior college, or college, all need good leads to good jobs. At the secondary level the vocational educator is in a prime position to provide this kind of support.

The important supportive services available from the Department of Rehabilitation are not to be overlooked. This department is specifically charged with helping qualified handicapped individuals gain and maintain employment. In a majority of cases, it deals with handicapped persons no longer eligible for vocational training through regular school programs. Coordination with the instructional team, especially the vocational educator, should be planned before the student leaves high school, so that if the student has not already been placed, the Department of Rehabilitation can continue to work with the individual on a client basis. Common sense suggests that education and rehabilitation agencies work cooperatively to assure continuity in job placement assistance for the handicapped.

Another approach to employment of the handicapped (including older handicapped persons as well as those just graduating) lies in volunteer placement services organized by businessmen and educators. Table 1.2 indi-

cates the wide range of skills listed in one such newsletter describing handicapped applicants for jobs in San Jose, California. Notice that handicaps are never mentioned since abilities, not disabilities, are being advertised.

TABLE 1.2: Advertisements Placed by Handicapped Job Seekers.

Professional—G.B. 2015 Engineering Assistant-Computer Equipment.

Design, development, testing, maintenance, and installation. Digital technology. Logic design. Degree in electronic technology.

Industrial—G.F. 5912 Electronic Assembler.

One year experience in testing, wiring, inspection, packaging, and solder pot operation; uses all small hand tools easily.

Sales/Clerical—L.J. 9331 Billing Clerk.

Ten key adding, calculator, typing 35 on Selectric. Knows tariffs and bills of lading. Six years with moving and storage company.

Service—R.D. 1506 Food Serviceworker.

One year experience in food service; can operate dishwasher, slicer, grill, mixer and cash register.

Followup

Followup is a logical extension of job placement. Many handicapped students want to maintain communication with their vocational instructors after they have a job. They may seek advice concerning a problem on the job. Also, vocational educators may contact the students to check on their progress. (See Figure 1.3.)

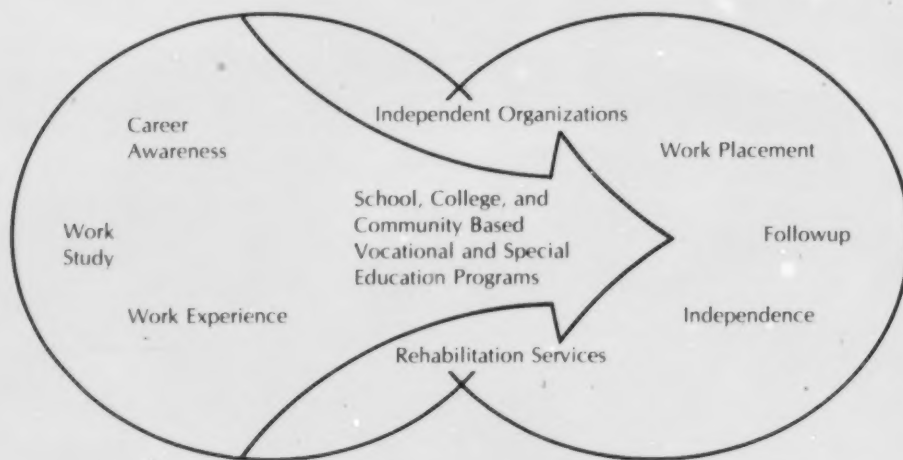


FIGURE 1.3: Avenues for Employment and Independence for Handicapped Students in the Mainstream.

It should be stressed that the skills a student develops in class may not transfer automatically into a work setting. The situation, the people, and expectations on the job are different. A vocational classroom is a place where every effort is made to help students feel they belong; a place where they are not yet expected to know but rather to learn in an understanding and supportive environment. However, in a real world work situation, productivity is the key. This may work to the disadvantage of the handicapped person.

What are some of the gaps or pitfalls that lead to on the job failure for a handicapped person even though he or she has demonstrated effective performance skills in the classroom? What could be done to prevent them?

Review

This section emphasized the following ideas:

- It is essential that vocational education programming for the handicapped student be a team effort, not the task of the vocational educator alone.
- Information about capabilities and interests of a student should be gathered. This information can contribute to meaningful planning and to student centered activities.
- Effective classroom training may be wasted without effective coordination and followup of the student in the work station.

SHAPING THE TRAINING ENVIRONMENT

Deciding What Is To Be Taught

The vocational advisory committee, the educational planning committee, and the vocational educator should cooperate in making a job market analysis for the school district. This analysis should be used to ensure that vocational training will be relevant and practical.

One special consideration is whether the community's jobs are centered in firms doing business with the federal government. If so, these firms may be affected by the vocational rehabilitation laws which require them to develop affirmative action plans for hiring the handicapped. In other words, job market analysis should be taken into account so that well trained, handicapped students may be welcomed by companies with such affirmative action programs.

In today's mobile society a person's first job may be in his or her own community, but often advancement in the career field or changes in career emphasis lead to employment in other communities. By comparing the local job market analysis results with the DOT (US Department of Labor, 1965), the vocational educator can develop a broader viewpoint for course planning. Many

commercially available prevocational assessment systems are directly related to the occupational clusters in the DOT, so that the vocational educator can assess incoming students' aptitudes for local jobs and at the same time consider the broader market place.

It should be kept in mind that the DOT and the prevocational assessment systems are necessarily general in nature. Specific jobs in the community, such as clerical work for a motel, an insurance firm, or a newspaper may differ from each other in terms of required job tasks. For example, horticultural training jobs might be available in plant and gift boutiques, florist shops, commercial flower greenhouses, a wholesale shrubbery nursery, retail plant nurseries, garden care firms serving both light industry and suburban homes, and at a local golf course and a city park. Assuming that among these alternatives, the city park, the commercial flower greenhouses, and retail nurseries might appear most interested in trying to work with handicapped students, a careful task analysis of employer requirements at each job location should identify the extent to which job performance depends on intellectual, social, perceptual, gross motor, or fine motor skills; it should establish the required rates of performance, the tolerance for error allowable, and the level of supervision to be expected. This information is basic in planning course content on an individualized basis. With this information, the vocational educator can guide handicapped students toward those opportunities that seem appropriate in view of their particular skills, and can design courses geared to their special needs.

Task analysis of some kinds of jobs reveal that it is also essential for employees in some jobs to be able to work with a minimum of supervision. This factor has definite ramifications for vocational training. Some handicapped individuals depend heavily on supervisors to tell them what work is to be done and when it has been satisfactorily completed. It would seem appropriate that these students learn how to concentrate on the tasks at hand during a supervisor's absence and how to judge the adequacy of their own work.

Nevertheless, the vocational educator must not ignore the possibility that an individual handicapped student could be equal to nonhandicapped students in ability to work without direct supervision. The teacher needs to check this out in a practical, task oriented way in some of the initial class assignments. If it is found that an individual student does indeed need to learn to work without close supervision, a study plan can be designed to build each desired competency to an acceptable level before placing the student in an actual work situation. Figure 1.4 summarizes the methods to be followed in establishing what is to be taught, that is, relating job analysis to training for a particular handicapped student.

Deciding Who Is To Teach It

Figure 1.4 does not indicate whether the three competencies requiring special attention (D, G, and O) were vocational in nature. If D were a math competency such as calculating change, G were a social competency such as helping customers, and O were a manual competency such as assembling and operating a rototiller, it

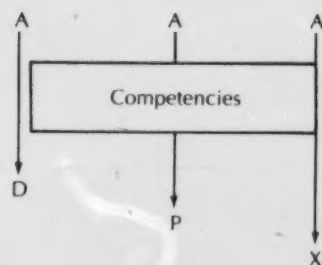
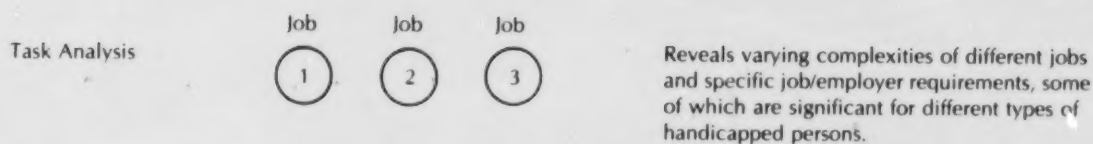
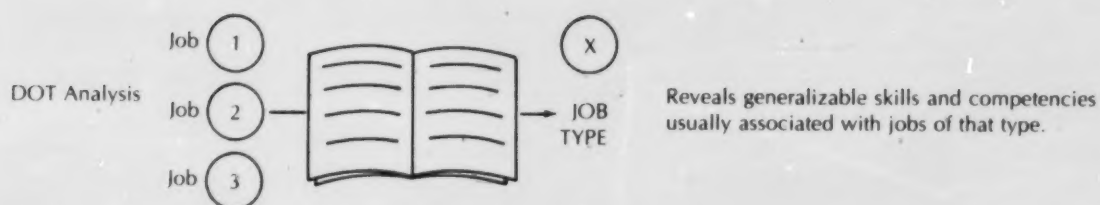
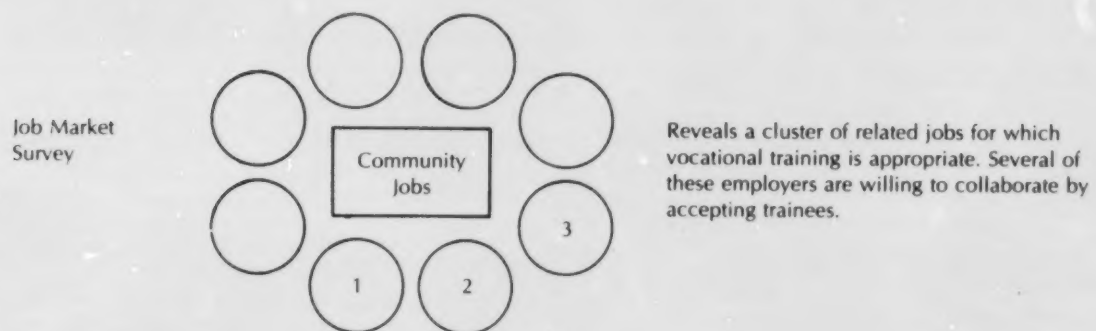
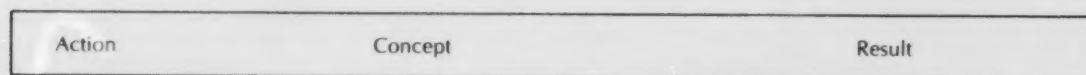


FIGURE 1.4: Methods To Follow in Establishing What Is To Be Taught.

FIGURE 1.4: Methods To Follow in Establishing What Is To Be Taught.—Continued

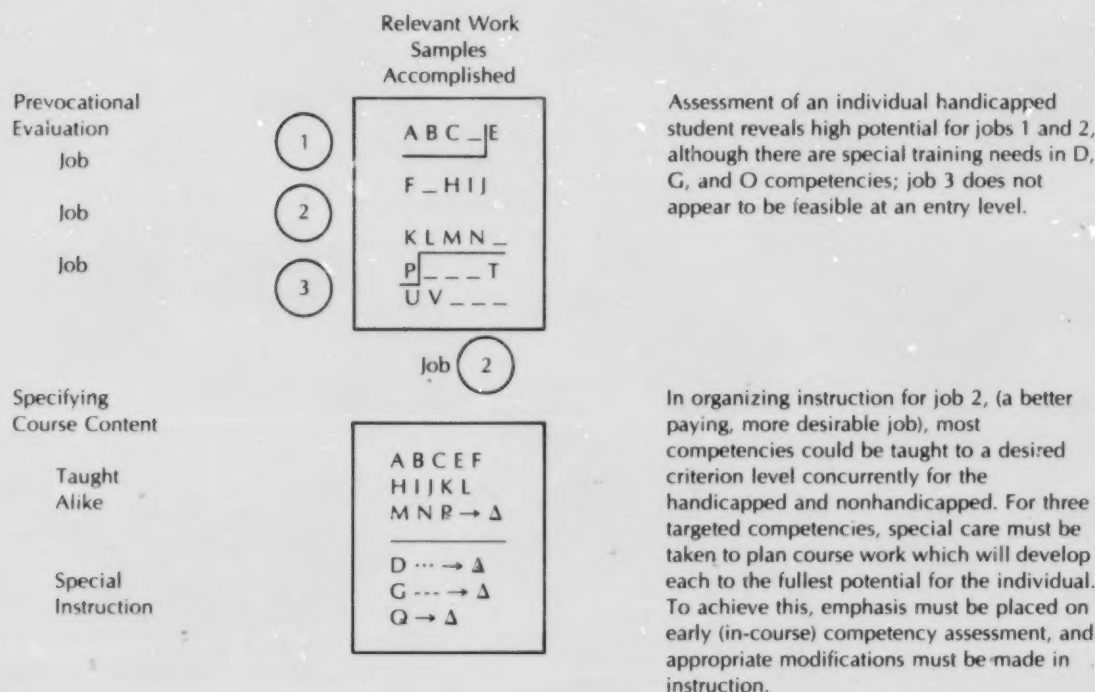


TABLE 1.3: Special Teaching Help According to Ability.

Handicap	Math Competency Requirement	Social Competency Requirement	Manual Competency Requirement
Communication Impaired: deaf (hard of hearing; speech impaired)	Tutor or buddy system	Special education teacher or tutor: lipreading and speech production, written language or sign language production	Classroom aide or buddy system: drills
Educable Mentally Retarded	Special education teacher or math teacher: help in planning money handling drills	School psychologist: help in planning instruction to improve frustration tolerance in interpersonal situations	Classroom aide: demonstration in small steps
Vision Impaired	Special education teacher: identification and handling of bills and coins	Special education teacher: help in personal grooming and modification of mannerisms	Occupational therapist or classroom aide (appropriate safety measures may be required)
Orthopedically Handicapped	Tutor or buddy system	Special education teacher or classroom aide: help in improving poise and self assurance	Occupational therapist or classroom aide

would not be hard to see that the nature of the handicapping condition affects the feasibility of teaching the competency and there is a possibility that the vocational educator may need to call upon other resource people in teaching the competencies. Table 1.3 illustrates the nature of special teaching help that might be selected depending on the type of handicapped student being served and the individual abilities of the student involved.

Deciding How It Is To Be Taught

Most vocational educators use a combination of group presentation and one on one teaching in their classrooms; however, the trend is clearly toward greater individualization wherever possible. Group presentations can be efficient in familiarizing students with the classroom environment, course procedures, and other general topics, but because students' rates of progress and learning objectives differ, it is likely that they will be working on a variety of tasks at the same time.

Thus, individualized instruction is needed and is useful when specific competencies are to be learned. Contracts can be written for each competency. They should specify:

- Procedures to be followed.
- Resources or persons to be involved (including the kinds of help or special assistance available).
- Skills to be demonstrated.
- The product to be prepared (if pertinent).
- A goal rate or time (if pertinent).
- General work habits to be exhibited.

The educator should ask students to help plan their own contracts. The students will become more involved and committed and will better appreciate the importance of adding to their competencies and building new skills. Handicapped students should have contracts that are as similar to those for nonhandicapped as possible though tailored to take into account their special needs. This provides positive reinforcement and promotes a can-do philosophy.

Deciding Where It Is To Be Taught

There is little question that instruction in the school will take place in the room normally assigned for the purpose, regardless of whether a handicapped person is in the class. Within the classroom, however, some flexibility may be important. Environmental adjustment that benefits the handicapped may include such considerations as:

- Seating that assures the best lighting, viewing angle, and listening and that includes the handicapped person in the thick of the action.
- Relocating any movable obstacles (wires crossing aisles, etc.) that could be hazardous to the blind, and reevaluating safety precautions (guards, etc.) on power equipment.

- Altering the design or location of work stations to make surfaces and tools accessible to the orthopedically handicapped.

Deciding where the handicapped person should be placed for work experience involves similar considerations, though the opportunity to alter the environment to accommodate the handicapped student is subject to practical limitations. Employers may be reluctant to cooperate in a work experience program if the student involved cannot function in the environment unless alterations are made. Common sense again comes into play. Select a work experience location that is fair to the handicapped student in terms of the inconveniences or problems to be faced. A few adjustments may be requested, but major concessions from the cooperating employer should not be expected.

Perhaps as important as the physical situation itself is access to the work experience location. Can the handicapped student find transportation to and from work? Is a closer, more convenient, but equally worthwhile location available? What arrangements can be made to provide transportation for the student by using vocational education set-aside funds, special education funds, or vocational rehabilitation assistance?

Deciding Whether It Has Been Learned

Assessment of student competencies is a necessary part of the instruction process. The student was assessed before instruction to identify strengths and weaknesses and should be assessed after instruction to see what growth has taken place. All students progress at different rates and in different ways. To the extent that instruction has been individualized, with specific goals for each student, the development of skills should be readily observable.

It has been stressed that handicapped students can be helped to develop in a number of ways—not only in the acquisition of vocational skills but also in essential living skills of a personal and social nature. Their gains may seem small in comparison with gains made by nonhandicapped students, but nevertheless could be quite significant advances. The important point is that some kind of progress should be evident.

Review

To train the handicapped person for competitive employment, the teacher should:

- Establish realistic goals for each individual based on preliminary assessment and personal characteristics.
- Cooperatively plan appropriate learning activities and goals, and indicate expected outcomes of training.
- Structure the training environment to support the necessary instruction.
- Provide adequate human resources to implement instruction.
- Assess student readiness for work experience and performance on the job.

What additional activities mentioned in this section are important to a well balanced vocational training program for handicapped persons?

EVALUATION

The (Vocational) Education Amendments of 1976 (P.L. 94-482) mandate evaluation of all federally funded education programs once every 5 years.

Program Evaluation and the Law

Systematic procedures for program evaluation and reporting are built into state plans for vocational education and for special education, and much of the resulting information is made available to federal offices. Vocational educators usually keep records that show the extent of service delivered, the nature of the student population served, and similar information. In successive years these statistics should reveal a definite upward trend:

- In the proportion and variety of handicapped students who are being successfully mainstreamed into regular vocational classes.
- In the variety of occupational areas in which handicapped students are receiving career exploration and training relevant to jobs.
- In the placement and successful job performance of handicapped students in local business and industry.

Justifying Expenditures

It is often stated that "you get what you pay for." To the extent that funds are available for hiring instructional aides, making minor renovations in facilities, and providing transportation when needed, it seems reasonable to justify their use. There is no widely accepted procedure for doing a cost benefit analysis at the local level, and it is not the kind of thing the vocational educator is likely to do in any elaborate way. Nevertheless, self appraisal by the vocational advisory committee, the educational planning committee, the learning support team, and the vocational educator should be focused on whether:

- The use of special funds enabled the fulfillment of particular student centered program objectives.
- The scope of instruction and quality of learning were enhanced through the use of the special funds.
- The funds were applied so as to yield substantial long term benefits.

Information for Future Action

When information is obtained for the purpose of improving future action, it is sometimes referred to as *process evaluation*. The vocational educator's close obser-

vation and assessment of student performance is very important in this procedure. Information is needed that:

- Allows educators to appraise their own knowledge about the handicapped, attitudes toward them, and professional strengths and weaknesses in dealing with them.
- Suggests improvements in course content, teaching techniques, assessment procedures, use of resource personnel, and other aspects of the instructional environment.

Handicapped individuals obviously have a vested interest in knowing how they have improved and what they have achieved. Their progress may be vocational in nature and/or may be related to general living skills. The vocational educator's evaluation should reflect the extent to which:

- Academic skills have improved, especially in applied reading and math.
- Communication skills have improved, especially listening and speaking in work relevant situations.
- Self reliance has improved, especially in self care, environmental awareness, and mobility.
- Self esteem has improved, especially in terms of personal dignity and realization of potential.
- Career goals have been advanced, especially in aspirations fulfilled and new interests developed.

Finally, the employers have practical criteria that are important in the selecting and retaining of employees. These criteria indicate that the vocational educator's evaluation of each handicapped student should reveal:

- The extent of the student's job knowledge.
- The level of skill reached in job operations.
- The development of appropriate work habits (punctuality, reliability, etc.).
- The ability to relate to others (coworkers, the public, etc.).
- A positive attitude toward the job (willingness to learn, follow directions, etc.).

Many other dimensions were identified as important for occupational survival in a recent study reported by O'Neil (1976). In this study some 300 persons helped to refine a tentative list of 500 occupational "survival skills" to 27 basic categories. A representative sample of 589 workers then judged their relative importance. Five important qualities emerged:

1. Being dependable.
2. Doing an honest day's work.
3. Knowing what is expected.
4. Maintaining good health.
5. Managing time and materials efficiently.

It is interesting to note that task proficiencies are not as important in occupational survival as are more general qualities of performance.

STUDY QUESTIONS

Problem 1

Various federal programs contain special provisions for providing vocational training to handicapped persons. Briefly describe the purpose and scope of the assistance available through the:

- Education for All Handicapped Children Act of 1975.
- Rehabilitation Act of 1973 and Rehabilitation Act Amendments of 1974.
- Vocational Education Amendments of 1976.
- Comprehensive Employment and Training Act of 1973.

Problem 2

Prevocational assessment is a highly important aspect of designing vocational education to serve individuals with handicaps. Discuss:

1. The merits and risks of using commercially available systems of work sample evaluation with handicapped persons (select and name one such system).
2. A strategy to be used to get an adequate variety of work sample assessments if the nature of the handicap precludes a fair assessment in a particular school which relies on a commercial system.
3. Other information about the student that could be used to form an idea of vocational potential (include work sample assessment).

Problem 3

Important in matching vocational training of handicapped persons to employability are:

- Analysis of the job market.
- Analysis of the tasks involved in currently available jobs.
- Analysis of individual competencies to determine individual skills.

Describe how such analyses might be facilitated by a team approach involving the vocational educator, the special educator, a community representative, and others.

Problem 4

Evaluation is essential to any education program, and it is especially useful when program modification and improvement are anticipated, resulting in a wider variety of courses available to the handicapped. Explain how information obtained from the following activities could help teachers to serve the handicapped student in the context of regular vocational training.

- Analysis of which regular vocational courses have been most popular with persons having different types of handicaps.

- Assessment of newly developed skills, demonstrated to criterion levels set cooperatively by the instructor and the individual student.
- Followup study of employment, especially of employer and employee satisfaction.

SELECTED PUBLICATIONS

Ballard, J. *Public Law 94-142 and Section 504—Understanding what they are and are not*. Reston VA: The Council for Exceptional Children, 1977.

This document provides 100 basic "need to know" questions and answers with respect to P.L. 94-142, the Education for All Handicapped Children Act of 1975, and Section 504, the fundamental federal discrimination prohibition for handicapped Americans. Emphasizing the close interrelationship of these two federal statutes, this document is organized into three components: rights and protections, fiscal considerations.

Brock, R. J. *Vocational education for the handicapped*. Menomonie WI: University of Wisconsin, 1975.

Outlined in this book are the basic steps required in the systems development of the vocational education program for the handicapped. Four basic problem areas are described: curriculum design and student performance evaluation; competency enlargement; practicums-clinical experience; and lack of identification regarding certification, housing, and degree titles. Useful appendices include a sample special education study field questionnaire, summary of program competencies and student performance criteria, test out procedures for referral forms, and site visit report.

Buros, O. K. (Ed.). *Vocational tests and reviews*. Highland Park NJ: Gryphon Press, 1975.

Consists of the business education, multiaptitude, and vocations sections of the seven *Mental Measurements Yearbooks* (1938-1972) and *Tests in Print II* (December, 1974).

Kirk, S. A. *Educating exceptional children*. Boston MA: Houghton Mifflin, 1972.

Designed as an introductory college textbook on exceptional children, the book attempts to bring an integrated and unified approach to the biology, physiology, sociology, psychology, and education of exceptional children.

Love, H. D. *Educating exceptional children in regular classrooms*. Springfield IL: Charles C Thomas, 1972.

This volume examines present policies and practices in serving handicapped students in regular classes. Each handicapped group is treated separately with particular problems and solutions discussed.

National Advisory Council on Education Professions Development. *Mainstreaming: Helping teachers meet the challenge*. Washington DC: US Department of Health, Education, and Welfare, 1976.

This publication defines *mainstreaming* and discusses its implications for both students and teachers.

Parker, S., Taylor, G. M., Hartman, W. T., Wong, R. D., Grigg, D. A., & Shay, D. E. *Improving occupational programs for the handicapped*. (OEC-0-72-5226), Washington DC: US Department of Health, Education, and Welfare, 1972.

Authors describe methods and programs in actual practice throughout the country. Also provided are practical information, program abstracts, and evaluation checklists.

Reynolds, M. C., & Birch, J. W. *Teaching exceptional children in all America's schools: A first course for teachers and principals*. Reston VA: The Council for Exceptional Children, 1977.

Regular and special education teachers and principals will find this book timely and comprehensive. It is a basic textbook that emphasizes the key role of the regular and special educator team. A unique feature is a section in many chapters on prevailing vs. preferred practices. Assessment, the individualized education program, teacher and parent interaction, various handicapping conditions, instructional procedures and teaching approaches, descriptions of training resources, and emerging trends and issues are presented.

Selected career education programs for the handicapped. US Department of Health, Education, and

Welfare. DHEW (OE) 73-05501. Washington DC: US Government Printing Office, 1973.

The publication provides information about programs being conducted in vocational preparation of the handicapped. It covers a broad range of vocational areas and widely differing handicapping conditions. Sources of additional information are listed.

Services for special needs. Bell Telephone System.

This booklet describes special equipment available for persons with hearing, sight, speech, or motion impairments. Many of the services were developed by the Bell System. Information and a copy of this publication can be obtained from the local Bell Telephone business office.

Urban, J., & Tsuji, T. (Eds.). *The special needs student in vocational education: Selected readings*. New York: MSS Information Corporation, 1974.

A collection of readings, this book can aid teachers in understanding more about handicapped students and the competencies needed to teach them. Thirty one articles form the series, which treats four varied aspects of vocational education for students with special needs. Suitable for both vocational teachers and teacher educators, the text discusses current issues in the field, gives pertinent legal background, and offers valuable information on the needs of students who are mentally or visually handicapped.

US Department of Labor. *A guide to seeking funds from CETA: A booklet to assist individuals and organizations to learn how to apply for CETA monies*. Washington DC: US Government Printing Office, 1977.

UNIT 2

Attitudes Richard Bond

Attitudes That Can Affect
Success in Teaching
Handicapped Students in
Regular Classes

ATTITUDES THAT CAN AFFECT SUCCESS IN TEACHING HANDICAPPED STUDENTS IN REGULAR CLASSES

In striving for an atmosphere that will promote a positive experience for the handicapped student, it is important to consider the attitudes of those people with key roles in the mainstreaming effort. Vocational educators with positive attitudes toward mainstreaming inevitably communicate these attitudes to others, to both handicapped and nonhandicapped students.

The attitudes of nonhandicapped students toward handicapped classmates are important. Handicapped students benefit greatly from social acceptance. A positive attitude can encourage the development of helpful relationships between classmates.

The attitude of the handicapped student's parents toward mainstreaming is equally important. Federal law (P.L. 94-142) guarantees parents the right to be involved in decisions about placement and programs. With recent trends and commitment to parent-professional partnership, it is advisable for the regular class vocational teacher and special education instructor to confer as a team with parents whenever possible.

It is essential that all school personnel examine their attitudes toward handicapped students and their parents as well as toward mainstreaming itself. Community support, as well, will affect the success of mainstreaming and will encourage mainstreaming to be extended from the school into the community.

What Is an Attitude?

An attitude is a predisposition, based on prior evaluation or experience, to respond in a positive or negative manner to someone or something. Attitudes are tendencies to behave, not actual behaviors.

Attitudes may be greatly influenced by daily experience. If experiences prove enjoyable and rewarding, a person is likely to develop a positive attitude. If experiences prove to be unprofitable or unenjoyable, the attitude is likely to be negative. For example, if a student's experiences with books, other children, and teachers have been largely positive, the student's attitude about going to school is likely to be positive.

The affective or feeling aspect of experience that people have gives strength or intensity to attitudes and is now recognized as an important variable in learning. The success of an instructional program can depend on it. Because feelings are an important component of attitudes, they should be carefully considered when we attempt to understand the importance of attitudes to success in teaching handicapped students in regular classes.

How Are Attitudes Identified?

Attitudes can be identified by asking people directly how they feel about something, and/or by observing their behavior. If the behaviors that are observed are consistent with a person's expressed feelings toward something, this is probably the best indication of what the individual's true attitude really is.

Why Are Attitudes Hard to Change?

The more information one has on which to base an attitude, the firmer that attitude will be and the harder it will be to change. It is not easy to listen to views that are contrary to one's own. It requires a willingness to reevaluate. Sorting and weighing new information to see how it supports or contradicts the information or feelings that underlie an attitude are important if one wants to be objective.

Like habits, attitudes sometimes become part of a person's identity. If an attitude becomes a part of how people view themselves or how others see them, that attitude is said to have been internalized.

Negative Attitudes toward Mainstreaming

Negative attitudes toward mainstreaming usually stem from concern about the following:

- The ability of the instructor to teach both handicapped and nonhandicapped students.
- The amount of effort and time required of the instructor to adapt a program to the needs of the handicapped student.
- The psychological welfare and physical safety of the handicapped students.

The first concern focuses on whether or not regular vocational educators who have not had special education training will be able to teach handicapped students. This concern carries the assumption that teaching handicapped students is so different and requires so much individualization that it is beyond the capability of the vocational educator. A further assumption appears to be that all disabilities are so severe as to prevent handicapped students from benefitting from a regular class. Neither assumption is correct. Like all students, handicapped persons require some degree of individualization in their educational program. But the vocational educator, especially with assistance from resource personnel and consultants, is usually able to individualize the program to meet the needs of the handicapped student.

Concern as to whether instructional adjustments necessary for handicapped students will demand too much of the teacher's time is also unfounded. (Some educators even fear they will have to conduct two separate classes.) Curriculum and presentation techniques must be modified, but the vocational educator should not try to plan these changes alone. The vocational instructor can work with the special education instructor to develop an effective educational program for the handicapped student in the regular class setting.

As for the psychological welfare and physical safety of the handicapped student in regular classes, it is true that some students may not be able to see or hear the warning signals about machine operations, but the instructor can often make the machinery safer and can arrange for the handicapped students to receive extra instruction in safety skills and good work habits.

The vocational educator will need to determine the

attitude of those who will be directly involved with the student as a step in insuring that they will have a positive influence on the student's own attitude. The best way to find out how someone feels about something is to ask that person directly, then check to see if the actual behavior confirms the stated feelings. For example, one might directly ask the principal if he or she understands that physical modifications must be made to meet a particular student's needs. Similarly, one might talk to other teachers to find out if that student was well accepted by peers in past classes.

In summary, attitudes are important because they predict behavior, can be transferred, tend to be contagious, and susceptible to change in relation to the intensity of feelings or in the information base that supports them.

To change negative attitudes into positive attitudes, it is necessary to provide new information to support the positive attitude and show the dissimilarities between the new situation and previous unpleasant situations, develop a positive attitude because it will influence others, and provide pleasant, rewarding experiences in order to reduce negative feelings.

Finally, when key people have a positive attitude toward mainstreaming, they will help overcome barriers and problems and promote its success.

- The principal's attitude will determine what help will be given in making modifications to the classroom and classroom equipment and what special assistance or consultation will be available to the regular vocational educator.
- Parents' attitudes will determine whether the student will be enrolled in the regular class and how much support the student will get at home.
- The attitudes of nonhandicapped students will determine what personal and social acceptance will occur.
- The attitudes of teachers will determine what type of support will be given to the vocational educator's efforts in mainstreaming.

STUDY QUESTIONS

Problem 1

Discuss how attitudes of the following people may be important in teaching handicapped students in regular vocational education classes:

- The vocational instructor.
- Nonhandicapped students in the class.
- Parents of handicapped students.
- The school principal.

Problem 2

Think of a situation involving a handicapped student (you specify the handicap) who has asked to take a specific class. Then, covering the following points, discuss how important attitudes could be identified.

- Whose attitudes may be relevant to the situation?
- What attitudes may be relevant to the situation?
- What concerns may be reflected in these attitudes?

SELECTED PUBLICATIONS

Cohen, S. & Koehler, N. *Fostering positive attitudes toward the handicapped: A selected bibliography of multimedia materials*. New York: City University of New York, 1975. (ERIC Document Reproduction Service No. 140515)

Listed in the bibliography are 34 multimedia materials designed to foster positive attitudes toward the handicapped. Information on title, length, distributor, cost, and content is provided for the following types of materials: 16 mm films, filmstrips and audiotapes, videocassettes, videotapes, slides, audiotapes, and records.

Cohen, S. & Koehler, N. *A selected bibliography on attitudes toward the handicapped*. New York: City University of New York, 1975. (ERIC Document Reproduction Service No. 140517)

The bibliography lists approximately 85 references (1962-1975) for professionals and children on attitudes toward the handicapped. Arranged alphabetically by author, the entries provide information on title, source, date, page numbers, and grade level (for children's literature). The children's literature is said to foster positive attitudes toward handicapped children.

Hobbs, N. *The futures of children: Categories, labels, and their consequences*. San Francisco: Jossey-Bass, 1975.

Presented is the synthesis of findings from 31 task forces in a federal project on classification of exceptional children. Because labeling children by disabilities is seen to promote their exclusion and rejection, a more constructive labeling procedure is advocated. It is suggested that historically, classification has legitimized social control of the individual as well as exclusion from the community. The book analyzes current labels such as retardation, emotional disturbance, and neurological impairment and recommends labeling according to the intervention needed. It proposes a classification model that arrives at a profile of individual strengths and weaknesses and specifies contractual responsibilities in intervention. Approximately 270 references are included.

Kroth, R. L. and Scholl, G. T. *Getting schools involved with parents*. Reston VA: The Council for Exceptional Children, 1978.

Offering practical assistance for teachers, teacher trainers, staff developers, and administrators involved with parents of handicapped children and youth, this book contains a comprehensive chapter on attitudes. The chapter summarizes the variations in parental and professional attitudes which ultimately affect the handicapped child.

UNIT 3

Serving the Health Impaired

Robert Weisgerber

The Educator, the Student,
and the Task

Establishing a Plan for
Individual Instruction

Carrying Out a Plan of
Individual Instruction

THE EDUCATOR, THE STUDENT, AND THE TASK

Understanding the Orthopedic or Other Health Impaired Student

Not all orthopedically handicapped or other health impaired persons have the same degree of handicap. Some are mildly involved, with problems that may not be readily apparent. Others are moderately involved with problems that may be very evident but nonetheless can be dealt with in regular classes. Still others are severely impaired; their problems require special classes and extensive assistance. This chapter is primarily concerned with the first two categories.

A person who has been handicapped since birth is more likely to have made a satisfactory adjustment to the handicap than one who has been recently disabled due to injury or disease. On the other hand, recently handicapped students who were not hampered by disabilities in childhood generally bring a more normally developed set of experiences and abilities to the vocational training situation. Such factors can have a bearing on vocational readiness.

A third factor is the stability of the condition: whether it is constant or intermittent and whether it is likely to deteriorate or to improve. Because vocational preparation is future oriented, it is important to keep in mind what is practical for the student now and what is likely to be practical for the student in the future. It is important to take a realistic but not pessimistic view.

Individuals differ sharply in physical condition, health, and capacity to engage in specified vocational training programs.

Physical Disabilities

Vocational educators need to become informed about their students' physical condition. Following is an explanation of some of the conditions with which the instructors should become familiar.

Orthopedic and other health impaired students include:

- *Congenital conditions and deformities.* These include a variety of physical problems affecting the individual since birth and ranging from heart defects to club feet to dwarfism. The physically evident deformities have relatively clear cut implications for what can be attempted. Less evident are any internal defects. These unseen conditions may prove to be more serious limitations on stamina and the effort to be expended in school or on the job.
- *Amputation.* The loss of all or part of an extremity can be traumatic. It may be congenital, the result of injury, or the result of surgery. Whatever the cause, the amputee will be facing problems in both physical and psychological areas, and choice for or against mobility can affect both areas directly.
- *Juvenile Rheumatoid Arthritis.* The cause of this disease is unknown. It involves inflammation of the

joints and sometimes of other parts of the body. Children frequently have rash and fever. Rheumatoid arthritis may be systemic, polyarticular, or pauciarticular. It has no cure. Aspirin is used to treat the inflammation. Problems educators should watch for include a high tone hearing loss, which is frequent and is caused by aspirin and which may affect speech reception; and "jelling" or "morning stiffness," which is an inability to move the joints freely (this stiffness may last from a few minutes to hours).

- *Hemophilia.* This is a serious hereditary disorder in which the blood fails to clot and deep tissue bleeding occurs following injuries such as bumps, sudden twists, pressures, or cuts. The condition affects males and is transmitted by females. The condition can be crippling and life threatening; it requires ongoing social and medical management.
- *Poliomyelitis.* This is a virus infection of motor cells in the spinal cord. In its mild, nonparalytic form, the virus causes only a swelling of cells and supporting tissues; recovery follows. When the virus destroys the cells themselves, paralysis is permanent. Widespread polio immunization has nearly eradicated the disease since 1956. However, some outbreaks since 1970 have pointed out the necessity of continued emphasis on the need for immunization. This disease does not affect intellectual functioning or ability to learn.
- *Cerebral Palsy.* This disorder or group of medical conditions is caused by damage to those parts of the brain that control and coordinate muscular action. These abnormalities are not progressive, and cerebral palsy is neither hereditary nor contagious. Sometimes the impairment is only slight, but in the majority of cases there are secondary handicaps such as speech or visual defects. Types of cerebral palsy include: spastic, athetosis, rigidity, ataxia, and tremor.
- *Epilepsy.* The Epilepsy Foundation of America (*Facts and Figures on the Epilepsies*, 1974, p.5) defines epilepsy as "a symptom of a disorder of the central nervous system, characterized by sudden seizures due to abnormal electrical discharges of brain cells." Because these symptoms are varied and complex, they are more correctly termed "the epilepsies." Many medications help control epileptic seizures. There are only a few vocations that persons with controlled epilepsy should not pursue. Research has shown that the epileptic worker is, if anything, more careful than the average worker and has fewer accidents on the job.
- *Spina bifida.* This is a congenital malformation of the spine in which the vertebrae show a cleft or failure to join. Its effects include leg paralysis, lack of bladder and bowel control, and in some instances, hydrocephalus (enlargement of the head). Except for those with hydrocephalus, persons with spina bifida can function within the normal range of intelligence.
- Other health impaired persons include *diabetics*, who can function effectively given a proper diet and an indicated insulin treatment; the *respiratory disordered*, who have asthma and allergies; those with *nephrosis*, a degenerative kidney condition; and those with *osteomyelitis*, a spreading inflammation of the bone.

Personal and Social Characteristics

As diverse as their handicaps are, the orthopedically impaired have common characteristics the vocational educator should consider.

Crutches, wheelchairs, and other appliances that call attention to their disabilities are unavoidable in the lives of many orthopedically handicapped students, who often encounter public reactions such as staring or avoidance. Fortunately, this kind of reaction is diminishing as more handicapped persons take active roles in society. Matter of fact acceptance is desirable in classrooms and at work stations.

Whether their individual impairments are highly visible as in paraplegia, or invisible as in hemophilia, handicapped persons are very conscious of being restricted in what they can do and where they can go. The frustrations that result are sometimes given inappropriate social expression. Kirk (1972) lists seven ways this frustration may be displayed: The individual may become verbally aggressive, blame other people, repress desires, withdraw into fantasy, degrade the original goal, act less mature, or compensate for the disability by shifting to different interests.

Basic Skills

As with the nonhandicapped, health impaired individuals differ widely in reading comprehension, computational skills, and general information. However, the frequency of secondary disabilities among some orthopedically handicapped students, particularly the cerebral palsied, can contribute to lower overall functioning.

Sensory Motor Characteristics

Here again a wide range of performance exists among the orthopedically handicapped. For example, the adult diabetic may lose finger tip sensitivity; paraplegics may develop powerful upper torsos as a result of therapy and the physical demands placed on those muscles; and the cerebral palsied are apt to have poor coordination and muscular control, but can develop their work tolerance.

Build on strengths, supplement existing skills, and be aware of the leverage that can be gained through the application of human engineering principles

Review

- Specify one handicap that is orthopedic and another that is caused by some other health impairment.
- Are the conditions specified likely to be degenerative or stable? Are the conditions likely to have secondary or associated handicaps that must also be considered?
- Regardless of the nature of the conditions, positive expectations about vocational training are warranted. Give three reasons why this is so.

Analyzing Vocational Tasks

Proper matching of the handicapped individual to vocational training requires knowledge of the individual and the tasks involved. Analyzing job tasks is not just breaking down the steps involved; it also requires consideration of work tolerance and physical requirements such as stamina, strength, intellectual, social, and motivational requirements, and communication requirements. The degree of mobility is also very important to the orthopedically handicapped.

Physical Considerations

Some jobs require extended physical effort. The job tasks need analysis in several ways to determine the essential manipulative requirements, the amount of stamina or force requirements, and the frequency and duration of the physically oriented tasks.

Analysis of manipulative requirements may be the most complex and most significant in matching the person and the job. Some considerations are whether the job requires:

- Gross motor skills such as climbing (balance and maneuverability).
- Fine motor skills such as lettering (smoothness and precision).
- Grasping and holding objects (one or two handed).
- Lifting or moving (weight and distance).
- Reaching (height and direction).

Intellectual, Social, and Motivational Considerations

Intellectual. Physical impairments do not automatically involve lower mental functioning. For example, cerebral palsy may be associated with brain damage, but it should not be assumed that the student with cerebral palsy is incapable of learning intellectually oriented vocations.

Social. Health impaired individuals can function better in work contexts where coworkers are understanding and cooperative. To maintain positive coworker relationships, it is important that health impaired individuals appreciate the importance of getting to work on time and otherwise fulfilling standard job responsibilities.

Motivational. When matching individuals who are health impaired to an occupational field, it is appropriate to maintain a long range perspective. Is there a good chance of finding a job in the field? Will there be an opportunity to grow and take on additional responsibility commensurate with individual potential and type of disability? Can the individual speak or write clearly for effective communication?

Mobility. It has been stated that "mobility is everybody's right, but the handicapped people have been frozen in place" (President's Committee on the Employment of the Handicapped, 1974). This statement has two dimensions, one relating to societal neglect and the other to very real problems faced by many handicapped persons in moving freely from place to place.

For example, H. Keith Russell, Handicapped American of the Year, who was paralyzed by polio 20 years ago but has continued to be active, was in the process of boarding a bus during a TV interview several years ago, when the bus pulled away from him. Soon after this incident appeared on television, the American Transit Association began to develop specifications for small buses suitable for a demand/response service.

Nevertheless, the main public transportation systems have not yet been modified to serve the orthopedically handicapped. Even where physical access problems are minimal, regulations can be a stifling barrier. For example, wheelchair occupants can be accommodated in commercial aircraft, but some airlines have rejected battery driven wheelchairs and some have arbitrarily imposed limits on the number of handicapped persons permitted on board. At the local level, school districts can allocate special funds in order to use minibuses to transport orthopedically handicapped persons to vocational training courses. Nevertheless, the problem focuses on whether orthopedically handicapped students will be able to find dependable and suitable transportation to work after leaving the vocational education program.

Physical barriers are often the single greatest cause of concern and frustration faced by the orthopedically handicapped trainee and job applicant. This problem can be surmounted and special funds can be tapped for the purpose of reducing these barriers.

Work environment. Certainly no hazards or unnecessary obstructions should be present at work or during vocational training. Here are some common sense guidelines:

- Walks should be of adequate width (48 inches) and slope for maneuvering.
- Ramps should be of adequate width, slope (1:12 inches), and surface for accessibility.
- Curbs should be sloped at intersections (1:12 inches).
- Stairs should have no projecting overhang, risers should be 7 inches or less, and minor rises between levels should be tapered.
- Floors should have nonslippery surfaces.
- Buildings should have at least one main entrance accessible by wheelchair; multilevel public buildings should have accessible elevators.
- Doorways should be wide enough (32 inches) for wheelchairs; revolving doors should be eliminated.
- Work areas, corridors, and parking lots should provide room for wheelchairs to enter and turn (60 inch clearance).
- Restroom stalls should be 36 inches wide, with mirrors, towels, etc., at a height of 40 inches and handrails at 33 inches in stalls.
- Controls (buttons, switches, telephones) should be accessible from wheelchairs (the lowest at 18 inches, the highest at 40 inches), and fountains at 33 inches, with upfront spouts and controls.
- Machine areas should provide adequate access (48 inches wide) to work station.

There is no question but that a student or worker needs ready access to supplies and tools and should

have access to lunchroom, lockers, and other general facilities. When seated at a work station, supplies and tools should be placed within a 30 inch radius of the worker.

The physically handicapped need a "fair chance environment." They are entitled to it.

One orthopedically handicapped person could not perform a desk job simply because she could not reach items on her desk. With a revolving top on the desk, her dependence on coworkers decreased and her work efficiency improved.

Review

Select a familiar occupational area. Using a current curriculum guide, trace the specific actions required and determine how the following are affected:

- Work tolerance and physical requirements.
- Intellectual, social, and motivational requirements.
- Mobility.
- Work environment.

ESTABLISHING A PLAN FOR INDIVIDUAL INSTRUCTION

Special Education and Medical Information

Information about health impairments should be available at the school district or county level. It should prove helpful to:

- Obtain a professional description of the nature of the disability and any limits it may set on the kinds of physical tasks the student can safely undertake.
- Establish whether the student's general health is adequate and what kind of attendance pattern may be expected.
- Find out whether physical therapy or occupational therapy is under way or contemplated.
- Clarify what special equipment and help may be available from special education services or medical and engineering services.

Academic, Personal, and Social Development

It is useful to determine whether each individual's basic academic skills, such as reading and computational skills, are up to an acceptable standard for the kind of vocational training being planned; whether the individual's personal qualities are well developed or need special attention; and whether the individual's social skills, especially those involving classmates, will permit teamwork and full participation in class activities. A comment made to the President's Committee on Employment of the Handicapped (1974) is relevant here:

Very little effort is put into nonvocational rehabilitation, although this is of tremendous importance.

Work habits do not start at age 21, when a handicapped person seeks employment, nor is employment the whole life. There is need for rehabilitation in the so called activities of daily living areas.

Vocational Readiness

In recent years, career education has been expanded into the early grades, especially at the awareness level. Consequently, future vocational classes will be much better informed about vocational options than is now the case. However, systematic prevocational evaluation will probably continue to be important in determining individual vocational interests, vocational aptitudes, previous occupational or skill training, ability to understand and follow directions, and ability to apply safety rules.

Sources of Information

Table 3.1 lists some alternative sources of information.

TABLE 3.1: Sources of Information on Vocational Readiness.

Type of Information	Sources
<i>Special Education and Medical Information</i>	
• Specific condition and status of disability • Physical coordination and limitations • General health history	• Special educator, physician, school nurse, physical or occupational therapist, parents
<i>Academic, Personal and Social Development</i>	
• Basic academic skills • Social effectiveness • Personal adequacy	• School records, special educator, other teachers • Counselor, student, parents, teachers • Counselor, student, parents, teachers, school psychologist
<i>Vocational Readiness</i>	
• Existing or potential job skills and interests	• Special educator, rehabilitation counselor, community agency assessment center

A team approach should be emphasized in planning and implementing a program of instruction. The cooperation of the special educator should be enlisted in in-

terpreting the information, in determining realistic individual goals, in developing a workable plan of instruction, and in dealing with any problems that arise. The special educator may be a special class teacher, a resource teacher, or an itinerant teacher who is available for a given period of time each week. The information collected is a mixture of facts and opinions and may seem contradictory at times. Information relevant to vocational training evaluation may have been gathered with other goals in mind. Medical information should be taken literally, except for overly glowing or despairing remarks. The information obtained should be used to help the relationship between teacher and student, not to prejudice the student.

The saying that "the past is prologue to the future" may not be altogether true for the orthopedically handicapped. A number of them have more pluck and persistence than might be expected. News media frequently remind us of near heroic feats by the disabled (cross state wheelchair marathons, etc.), of their ability to adapt (e.g., playing basketball in wheelchairs), and of their capacity for rising to a challenge.

As the vocational educator and special educator interpret the information, they should:

- Keep an open mind about the student.
- Look beyond the handicap to develop a picture of the whole person.
- Relate the information to a plan of action by looking for limits and cautions, looking for ideas and suggestions, and identifying persons who can help in a resource capacity.

Review

The teacher may have very little time to search for information about a student, even in special cases. If time is limited, whom should the teacher contact and what would the teacher most want to learn? In what ways could an understanding of the whole person change the instructional approach?

Setting Goals and Criteria Appropriate to the Individual

Federal law (P.L. 94-142) calls for the involvement, whenever appropriate, of the student in the development of an individualized education program.

Educators should focus on motor skills that are generalizable to many job situations, on proper work habits, and on working effectively with others.

Specific, near term study objectives should be determined at the outset. The ability to produce products to a standard, to work alone, to take responsibility, and to accept supervision are important in getting and keeping a job. These goals should be discussed with the student, and each goal should be made as concrete as possible.

Performance criteria should be concrete and explicit. The student should know how work will be judged.

Time should be allowed for interim feedback to the handicapped student, who needs positive reinforcement and encouragement, as well as recognition, for accomplishments achieved and for progress in personal development.

Review

- The setting of goals for the orthopedically handicapped student should definitely involve the student.
- Who else might be involved in the setting of goals? In what way should others be involved?
- If the orthopedically handicapped student is falling behind in meeting expectations, what actions might be appropriate?

Considering the Instructional Framework

In planning instructional strategy, the following questions should be asked:

- Have plans been made to utilize resource personnel, including the special educator, occupational or physical therapist, media specialist, classroom aides, and other persons directly involved in vocational education? Has planning included nonschool persons such as cooperating employers, community service workers, rehabilitation counselors, volunteers, and others who can acquaint the orthopedically handicapped student with the world of work?
- Have materials been reviewed along with equipment resources for adequacy in meeting the needs of the orthopedically handicapped student? Have steps been taken to obtain appropriate materials and equipment through school channels? (Assistance can be sought at the district or county level. The vocational education advisory committee can suggest equipment modifications and assist in obtaining special equipment and materials.)
- Have physical facilities been reviewed and steps been taken to modify them considering overall room layout, seating and work stations, special equipment attachments, and access to supplies and other facilities in terms of whether they are manageable from a wheelchair or within other physical limitations faced by the individual?
- Has the curriculum been carefully planned? Is the content relevant to the job, appropriate for the physical limitations of the handicapped persons, structured to evidence specific task competencies, and coordinated with the student's career aspirations?
- Have teaching methods been reexamined? Presentation methods should assure that the handicapped person can see and hear what is being demonstrated; that there is access to personal assistance, perhaps through a buddy system, when it is needed to accomplish an intermediate level task; and that individualization has been emphasized to the maximum extent.

- Has a positive attitude been developed along with a positive reinforcement style in the face of problems and shortcomings?

Participation of Concerned Others

Other persons should not become so involved that teacher or student becomes dependent on them. The student should develop self reliance and competence. However, experience has shown that the help of resource persons is most valuable.

- During preplanning the special educator, resource teacher, or itinerant teacher will be particularly helpful.
- During the initial weeks of instruction a classroom aide may be very helpful.
- Throughout the course other students can prove to be useful.
- In placement for work experience or employment coordination with volunteer agencies, the Department of Rehabilitation, the regional CETA office, and the business community itself can be helpful.

Planning for Assessment and Program Modification

Assuming that the plan of instruction is based on good information, that it provides for the input of concerned others at appropriate times, and that it anticipates potential problems (thereby minimizing them), the plan should nevertheless be examined from time to time. Even a good plan can be made better.

Evaluation that considers interim results in order to restructure instruction is called *formative evaluation*. This is the approach the vocational educator should use.

Review

Six main points were listed under the heading "Considering the Instructional Framework." If the teacher planning reveals that the physical facilities are not "up to par," should the teacher:

- Postpone the student's enrollment until the facilities are improved?
- Proceed on the basis that the student will be better prepared for the realities of the world of work if the facilities are less than desirable?
- Make do and adapt as best he or she can?

Justify the choice in terms of benefits to be derived by the student.

CARRYING OUT A PLAN OF INDIVIDUAL INSTRUCTION

Careful planning is basic to an effective educational program. However, even careful plans may need to be modified as the teacher works with the orthopedically handicapped student.

Indications of Vocational Growth

In proceeding with an individualized plan of instruction the teacher should collect objective measures of student proficiency as well as observed indications of improvement. Each has a rightful place in any assessment of the whole person's potential.

Objective Assessment of Proficiencies

The testing program should be criterion referenced with milestones jointly set by teacher and student. For each significant instructional objective it should show the degree to which the student (a) exhibits the required knowledge and (b) can apply it to the task at hand. For example, in electronics, knowledge might be demonstrated through multiple choice matching of schematic symbols to names of component parts, showing that the essential information has been committed to memory. The student might demonstrate application of this knowledge by reading a schematic diagram to the instructor.

If the learning objectives were set cooperatively, students would already know that they must demonstrate mastery of the information. Incentives and positive reinforcement should accompany attainment of each objective, especially early in the course.

It makes little sense to use normative grading of students. Letter grades describe a student's performance in relation to all classmates in the subject being tested, but add very little to what teacher and student already know. Neither are they very useful to prospective employers.

Observational Evidence of Vocational Growth

As teachers observe the way the student works and interacts with others, they can maintain progress charts or fill out checklists. Progress charts have an advantage in that students can see any gains in competencies. Checklists are simple and easy to use. Also, they can easily be carried to any level of specificity. Table 3.2 suggests a limited number of topics for consideration. Teachers will probably want to add other items and revise the list according to their vocational functions and concerns.

Systematic evaluation is important for handicapped and regular students. In his book *Rehabilitation Medicine*, Rusk (1971) listed four specialized purposes for evaluation. Because these purposes are oriented toward rehabilitation engineering, they apply in particular to orthopedically handicapped students who need special equipment to enable them to function effectively. The four purposes include:

1. Evaluation of the activity to be performed and the physical requirements for it.
2. Evaluation of the psychological response to the use of the equipment.
3. Evaluation of the materials and their design to be used in the construction of the device.

4. Evaluation of the role of the device in rehabilitation of the individual.

In evaluating a student, the teacher should keep these four types of special evaluation in mind.

Overcoming Problems

It is very likely that problems will arise from time to time. For the most part they will be minor and can be easily corrected. Some may be more difficult to correct; appropriate methods for dealing with them should be established early. Some of the more relevant problems that may arise in teaching the orthopedically handicapped are:

- Physical accidents and liability. Reasonable classroom safeguards fulfill regular school district liability requirements. If the student falls from a wheelchair or has a seizure or other emergency, the teacher should follow advance procedures worked out with the special educator or principal.
- Dealing with problem behaviors. If frustrated at not being able to accomplish things, the student may become defensive and withdrawn or aggressive and monopolize attention. If the student begins to exhibit such behaviors the teacher should not react negatively, but should implement a planned positive reinforcement approach.
- Surmounting instructional blocks. If the student seems stumped, unable to understand or physically accomplish a task, it is up to the teacher to implement alternative strategies, instead of giving up, because the student may succeed in time.
- Approaching and working with employers. If the student is orthopedically handicapped, some potential employers may display avoidance behavior. The best solution is to present criterion evidence to describe what the student has demonstrated he or she can do. In making preliminary arrangements for work experience, for example, a new contact with a potential co-operating employer should emphasize (a) the work record, (b) the community service aspect of hiring the handicapped, and (c) the teacher's willingness to work closely with the employers during a trial period. Also, employers should be assigned the most capable handicapped student (if there are several) until initial anxieties are overcome.

Documenting Efforts and Outcomes

In instruction and assessment of handicapped students, teachers should document both their efforts and the outcomes of those efforts. They will need to document the students' progress for school record purposes, for parents, and for the students themselves. If the student expects to seek employment, teacher documentation will serve that purpose.

Table 3.3 offers a checklist of some program components the teacher may want to evaluate. The teacher will probably want to go into greater detail, in line with specific vocational functions and objectives.

TABLE 3.2: Suggested Topics for a Progress Chart.

Observation of Student	Progress	Planned Goals Met	Possible Modifications
<i>1. Self Regard</i>			
Takes pride in accomplishments	_____	_____	_____
Refers to self in positive terms	_____	_____	_____
Accepts handicap realistically	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
<i>2. Interaction with Others</i>			
Initiates contacts with others	_____	_____	_____
Works well in a team	_____	_____	_____
<i>3. Vocational Skills</i>			
Improves manual skills	_____	_____	_____
Improves communication skills	_____	_____	_____
Improves reasoning skills	_____	_____	_____
<i>4. Work Habits</i>			
Performs work in timely manner	_____	_____	_____
Maintains equipment properly	_____	_____	_____
Follows safety precautions	_____	_____	_____

Review

Explain whether teachers should take the same or a different approach to prospective employers if the student involved is:

- Paraplegic
- Hemophiliac
- Cerebral palsied with secondary speech problems

Should indications that a student did not benefit a great deal from a specific course have a bearing on a teacher's accepting another handicapped student? Explain your answer.

STUDY QUESTIONS**Problem 1**

What tactics should a teacher use to assure the cooperation and understanding of classmates of a handicapped student who:

- Displays frustration by aggressively blaming classmates when things go wrong?
- Cannot match classmates' standards of output but has done well in terms of the student's own more limited goals?
- Is physically deformed and has previously been subjected to derisive remarks?

TABLE 3.3: Program Components To Be Evaluated.

Adequacy of Program for Meeting the Needs of (name) _____		
<i>Program checklist</i>	<i>Appropriate</i>	<i>Possible modifications</i>
Initial career awareness	_____	_____
Pretraining assessment	_____	_____
Individualization strategy	_____	_____
Instructor techniques	_____	_____
Course content	_____	_____
Facilities	_____	_____
Materials	_____	_____
Equipment	_____	_____
Resource persons	_____	_____
Work experience opportunities	_____	_____
Coordination with service agencies	_____	_____
Followup	_____	_____

Problem 2

What physical problems is a wheelchair-bound student likely to encounter in class, and what might be done about them when:

- The class is in a horticulture course, which involves greenhouse work?
- The class is on the first floor, which is reached by a flight of six steps?
- The class is in food preparation and the kitchens are equipped with standard appliances and overhanging storage cabinets?

Problem 3

A student with arthritis transfers to a school from another district and is interested in a class in cabinetmaking that involves standing up and requires considerable stamina and strength. How may the teacher:

- Determine whether the course is suitable for the student?

- Carry out safe and informative job sample assessments to see what kinds of skills the student possesses?
- Lighten the physical burdens (lifting, etc.) the student may face during class?

SELECTED PUBLICATIONS

Aiello, B. *Places and spaces: Facilities planning for handicapped children*. Reston VA: The Council for Exceptional Children, 1976.

This illustrated guide on how to plan facilities so that handicapped people can function independently is an indispensable aid to special educators and architectural designers. The book is divided into four sections: an overview stressing the importance of cooperative planning by architects and educators; an annotated bibliography on recent innovations in facilities planning; an illustrated section of specifications for designing and adapting walkways, entrances, stairs, and

toilet facilities; and a resource section on advocates for architectural accessibility.

Bleck, E., & Nagel, D. *Physically handicapped children: A medical atlas for teachers*. New York: Grune and Stratton, 1975.

This text provides medical information and suggests instructional approaches for teachers of physically handicapped children. The following disorders are discussed: amputations; arthrogryposis; asthma; cerebral palsy; communication disorders; convulsive disorders; cystic fibrosis; dermatomyositis and polymyositis; diabetes; Friedreich's ataxia; heart disease; hemophilia; Duchenne muscular dystrophy; myelomeningocele, meningocele, and spina bifida; temporary orthopedic disabilities; osteogenesis imperfecta; traumatic paraplegia and quadriplegia; poliomyelitis; rheumatoid arthritis; sickle cell disease; spinal muscular atrophy; and visual disorders. Also included are descriptions of basic anatomy, emergency procedures, and parent counseling techniques.

Davis, K. *It's about time physical disabilities came out into the open*. Madison WI: University of Wisconsin, 1976.

Written for vocational educators, this pamphlet covers the following physical disabilities: amputation, monoplegia, hemiplegia, triplegia, quadriplegia, and paraplegia.

Friderici, L. (Ed.) *Handbook for the handicapped*. Tampa: University of South Florida, n.d.

A guide to serving handicapped students, this publication contains information about the opportunities and barriers that a handicapped student may encounter on campus. May be ordered from: Advisor to Handicapped Students, CTR217, University of South Florida, Tampa FL 33620.

Kliment, S. A. *Into the mainstream: A syllabus for a barrier-free environment*. Washington DC: Rehabilitation Services Administration, 1975 (ERIC Document Reproduction Service No. ED 112 492).

This guidebook serves as a ready reference for persons seeking practical information necessary to plan a barrier-free environment. The first chapter gives background on the history of accessibility codes and legislation during recent years. The balance of the text gives a comprehensive overview of barriers faced by the handicapped and offers suggestions and techniques for providing greater accessibility. The final chapter cites additional resources and contains a list of agencies that may be contacted for further information.

Mace, R. *Accessibility modifications: Guidelines for modifications to existing buildings for accessibility to the handicapped*. Raleigh: North Carolina Depart-

ment of Insurance, Special Office for the Handicapped, 1976.

This 63 page document gives illustrations and specifications for a wide variety of applications such as elevator button heights and restroom stalls. It also suggests problem solving approaches.

Mallik, K., & Yuspeh, S. *Bio-engineering services to the developmentally disabled adolescent*. Final report. Washington DC: George Washington University, Job Development Laboratory, 1975 (ERIC Document Reproduction Service No. ED 113 892).

A one year demonstration project designed to increase the educational and vocational potential of 24 students with severe physical limitations. Contains descriptions and illustrations of adaptive devices for use by the physically handicapped.

National Easter Seal Society. *Current materials on barrier-free design*. Chicago IL: 1978.

This nine page pamphlet is a resource guide of available material on barrier free design. The pamphlet includes categories of guides, standards, legislation, and design specifications for developing accessibility (NESS Catalog number A-200).

RESOURCES

The Arthritis Foundation
3400 Peachtree Road, NE
Atlanta, GA 30326

The primary goals of this organization are research, treatment, training for professionals, and publication education about arthritis.

Muscular Dystrophy Association
810 Seventh Avenue
New York NY 10019

This association is a voluntary health agency that fosters research and education on the cause and cure of muscular dystrophy and over 30 related neuromuscular diseases.

National Association of the Physically
Handicapped, Inc.
76 Elm Street
London OH 43140

This group works to advance the social, economic, and physical welfare of the handicapped. Members consist of both handicapped and nonhandicapped persons, over 16 years of age.

National Center for a Barrier Free Environment
7315 Wisconsin Avenue NW
Washington DC 20014

This is a coalition of major groups active in promoting a barrier free architectural and transportation environment.

National Multiple Sclerosis Society
205 E. 42nd Street
New York NY 10017

The society promotes research and public education. It also provides services to persons disabled by multiple sclerosis and helps to establish treatment centers.

National Paraplegia Foundation
369 Elliot Street
Newton Upper Falls MA 02164

This organization carries out activities to inform and educate concerned professionals and the general public. Programs include case consultation, promotion of research, publications, and information services.

United Cerebral Palsy Association, Inc.
66 East 34th Street
New York NY 10016

UCPA is an association of groups aiding the cerebral palsied. It supports research and sponsors professional and public education about cerebral palsy.

UNIT 4

Visually Handicapped Students

Caroline M. Dillman
Patricia Maloney

The Educator, the Student, and
the Task

Establishing a Plan for
Individual Instruction

Carrying Out a Plan of
Individual Instruction

THE EDUCATOR, THE STUDENT, AND THE TASK

Understanding the Totally Blind or Visually Impaired Student

In the 1930's a legal and economic definition of blindness was drawn up to provide guidelines for the then new Social Security Act. The definition was meant to help determine those eligible for federal and state aid to the blind and is commonly called a legal definition. It specifies that a person is blind when "the better seeing eye has a distance vision of 20/200 or less when aided by the best spectacle correction using ordinary lenses, or a visual field of 20 degrees or less at the widest point" (Prime Study Group III, Eleventh Institute on Rehabilitation Services, 1973). A person with 20/200 vision sees at 20 feet that which should be seen by a normally seeing eye at a distance of 200 feet. The person with 20/20 vision is considered to have normal or perfect vision.

The legal definition of blindness has not been found to be very functional. A significant number of those classified as legally blind (20/200 or less) have learned to use their residual vision to read large and, in some cases, regular print. As a result, new working definitions that are more practical for educators have been developed:

- *Totally blind*: those who have no functional vision to see print or objects in their environment.
- *Visually impaired*: those who have low vision and can see print or objects with optical aids.

It is important to understand that the term *visual handicap* is not limited to those persons with a total lack of sight. The totally blind represent only 10% of the legally blind population. There is a continuum from totally blind to partially seeing. In between these extremes are many gradations and variations of impairment. Distinguishing between the totally blind individual and one with visual impairment is but a first step in learning about the degree of visual handicap.

A number of conditions that can cause blurring, sensitivity to light, jerky eye movements, or other problems are listed below. Some can result in total blindness. The more severe the impairment, the greater the number of functional problems that are likely to be encountered in the vocational classroom.

- *Myopia (nearsightedness)*: A condition in which vision is blurred when the eyes try to focus on distant objects. A myopic person can see better when the object is brought close enough to the eye. The condition can be corrected by lenses.
- *Hyperopia (farsightedness)*: A condition in which the eye must adjust constantly in order to get a clear image of close work. Excessive adjusting may cause symptoms such as eye fatigue, blurring, and headaches. This condition can also be corrected by lenses.
- *Astigmatism*: A disorder that prevents rays of light from coming to a single point of focus on the retina of

the eye and produces a distorted image. Special lenses can correct the situation in most cases.

- *Cataract*: A condition in which the normally transparent crystalline lens becomes opaque and clouded, and vision becomes blurred. Surgery is usually the best method for improving vision.
- *Retinitis pigmentosa*: A chronic, progressive, degenerative disease of the retina. It can occur early in childhood or at a later age. Night blindness is the first symptom. The visual fields are usually restricted, leaving only central vision, which may later be destroyed. At present there is no known cure.
- *Retrolental fibroplasia*: A condition characterized by the formation of scar tissue behind the lens of the eye. This condition develops chiefly in infants born prematurely and subjected to a high concentration of oxygen. Generally, both eyes are affected.
- *Structural anomalies*: Strabismus (crossed eyes) and nystagmus (rapid involuntary eye movements) result from abnormalities in the external ocular muscles. These conditions may be either constant or intermittent and are frequently associated with other visual defects.
- *Optic nerve atrophy*: Degenerative condition caused by injury or disease in the fibers of the optic nerve.
- *Albinism*: A hereditary condition in which there is a lack of pigment in the iris and choroid coat, along with a lack of skin and hair pigment. Albinism may result in lowered visual acuity, jerky eye movements, and sensitivity to light. No cure is known.
- *Glaucoma*: An eye disease caused by increased pressure within the eye. There may be a number of causes but the condition tends to follow a hereditary pattern. When treated early, glaucoma may be controllable and the remaining vision saved.

The Student's Needs and Skills

The needs of a visually handicapped student will vary according to the age at which the impairment occurred. The student who has been totally blind since birth or from an early age will need special help in developing adequate concepts of space and form. The person recently blinded will need special help in adapting to blindness.

Visually handicapped students have differing capabilities. Several are of special concern to vocational educators.

Reading skills. This is one area in which the totally blind or visually impaired student will differ from other classmates. The degree of impairment will determine what degree of adjustment in reading materials is needed. The totally blind student will require different educational aids than the slightly or moderately impaired student (see Figure 4.1).

Braille (see Figure 4.2) is a touch system of reading. Letters and numbers are presented as raised characters. The characters consist of different combinations of six dots arranged in a cell two dots wide and three dots high. Totally blind students and some visually impaired

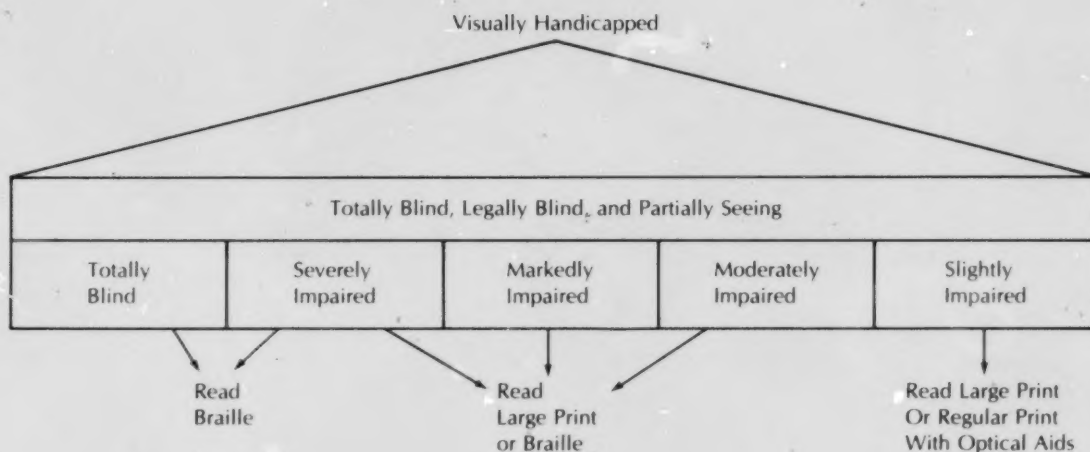


FIGURE 4.1: The Degree of Impairment Determines the Adjustment in Reading Materials Needed.

students rely on braille for any reading they do. Much information is already available in braille form, but if it is not, the student must create it, have it transcribed, or learn through other senses, primarily the sense of hearing. All visually handicapped students will lean heavily on the use of auditory aids such as tape recorders, records, and electronic devices. Most will use readers as well as braille books to absorb information. The student who has only visual impairment can usually rely to some extent on vision; therefore, large print books, magnifying lenses, or closed circuit television may be the main adjustments needed.

Academic skills. Studies have shown that the academic abilities of the visually handicapped are not different from those of sighted students. With the use of instructional aids these students can be as capable as their sighted classmates in learning and performing a task. One area of difficulty that may call for special emphasis is the understanding of concepts. The visually handicapped student relies primarily on hearing and touch to become aware of the world, but many objects cannot be understood readily through touch or sound. Whenever possible the visually handicapped student should be given clear and detailed explanations of what is being

a	b	c	d	e	f	g	h	i
•o	o•	oo	oo	o•	oo	oo	o•	•o
••	o•	••	•o	•o	o•	oo	oo	o•
••	••	••	••	••	••	••	••	••
j	k	l	m	n	o	p	q	r
•o	o•	o•	oo	oo	o•	oo	oo	o•
oo	••	o•	••	•o	•o	••	oo	oo
••	o•	o•	o•	o•	o•	o•	o•	o•
s	t	u	v	w	x	y	z	
•o	•o	o•	o•	•o	oo	oo	o•	
o•	oo	••	o•	oo	••	•o	•o	
o•	o•	oo	oo	•o	oo	oo	oo	
1	2	3	4	5	6	7	8	
•o o•	•o o•	•o oo	•o oo	•o o•	•o oo	•o oo	•o o•	
•o ••	•o ••	•o ••	•o •o	•o •o	•o ••	•o ••	•o ••	
oo ••	oo ••	oo ••	oo ••	oo ••	oo ••	oo ••	oo ••	
9	0							
•o •o	•o •o							
•o o•	•o oo							
oo ••	oo ••							

FIGURE 4.2: The Braille Alphabet and Numbers.

This is an example of large print, consisting of a recipe from *A Campbell Cookbook* (1969), produced by Volunteer Service for the Blind, Inc., Philadelphia.

CREAMED EGGS

- 1 can (10 1/2 ounces) condensed cream of celery, chicken, or mushroom soup
- 1/3 to 1/2 cup milk
- 4 hard-cooked eggs, sliced (use egg slicer)
- 2 tablespoons chopped pimienta
- 4 slices toast

In pan, blend soup and milk. Add eggs and pimienta. Heat; stir now and then. Serve on toast.
4 servings.

demonstrated in class. For example, pointing to a switch and saying to the class, "this turns on the machine" tells little to the visually handicapped student. Saying something about the switch's location in relation to the machine and its basic shape and turning it on momentarily for auditory clues will allow the visually handicapped student to form a better concept of what is being discussed.

Social skills. One factor that affects the visually handicapped student's level of social skills is the ability to get around in the environment, or mobility skills. Social independence, ease in new or strange social situations, and relationships with classmates are all dependent on the individual's command of self and environment.

An important factor in the blind worker's entry into the regular world of work is the ability to look and behave like other workers. The blind student may also need help in improving personal appearance. Because of the lack of visual models for behavior, the blind student may not be aware of untidy or inappropriate dress, hair style, gait and posture, and mannerisms.

Fundamentally, the differences between the visually handicapped student and sighted classmates are few. The similarities are many. Like any other student, the visually impaired student has individual aptitudes, needs,

and interests. Through the use of interest and aptitude tests, the vocational educator can get a sense of the student's potential. Knowledge of hobbies and past work experiences can also be helpful in getting a complete picture of the student. Checking the student's knowledge of jobs held by others can help indicate familiarity with the job world.

Review

- How would instructional assumptions about persons who recently became visually impaired differ from assumptions about persons totally blind since birth?
- In teaching the operation of a machine to a totally blind student, what steps should be taken to ensure that the relationships of the machine's parts are clear?

Considerations Implicit in Vocational Tasks

Physical Considerations

A study was done in rehabilitation agencies in California to find out what individual characteristics of blind adults are important for success in rehabilitation. The study

found that the most significant variable that differentiates between success and nonsuccess is the adequacy of orientation and mobility skills. In other words, the better a student can get around, the better that student's chances for successful vocational rehabilitation. The importance of this point can hardly be overemphasized. The student's orientation and mobility needs should be addressed before work placement is considered.

- **Orientation:** The process of using the remaining senses in establishing one's position and one's functional relationship to objects in the environment.
- **Mobility:** The ability to move safely, effectively, and comfortably from one place to another within the environment by using the remaining senses.

The teacher should first ascertain the level of orientation and mobility skills presently held by the visually impaired student. Has the student had any formal orientation and mobility training? If not, are such services available through the school district? The state department of rehabilitation can provide such a service to help prepare the individual for employment. If the student's skills are underdeveloped in this area, all efforts should be made to develop them fully. Resource personnel who can be of help include the special education teacher, the orientation and mobility instructor, and the local vocational rehabilitation counselor.

The more independent a blind person is, the more that person will be accepted by employers, fellow employees, relatives, friends, and neighbors.

Mental Considerations

A popular fallacy is the assumption that there is a difference in intelligence and potential for educational achievement between the sighted and visually handicapped. Unless the student has a mental handicap in addition to the visual impairment, there is no reason for such a belief. Once that notion has been dismissed, attention can be paid to those factors that do affect those with impaired vision or no vision.

Two points should be kept in mind in teaching blind students. First, the blind student cannot rely on sight to determine the relationship of one object to another, and, second, the blind student may have a poorly developed concept of an object's space and form. Does the task to be learned require prior knowledge of the relationship of one object to another? Are the characteristics of an object important? If so, the blind student may need an explanation in meaningful terms.

Social Considerations

It is extremely important that social adjustment take place so that the student is at ease with classmates and

with employers and employees at any work location. The totally blind and visually impaired student needs to be accepted by peers and adults and to be included in interaction with them—not as a special case but simply as a human being.

Emotional problems in social adjustment are not an inherent consequence of the visual handicap. If social maladjustment exists it is often a result of the negative attitudes of others, which in turn give the student a negative self image. Social acceptance helps produce a harmonious and comfortable atmosphere for learning and performing vocational tasks.

Communication Considerations

It is obvious that the totally blind and visually impaired must rely on the senses of hearing, smell, and touch more than sighted persons do. It must be emphasized that these visually handicapped persons do not suddenly acquire more acuity in these senses than they had before sight impairment or loss of sight. Those born blind were not also born with more acuity in other senses, and contrary to widespread belief, they are not supersensitive. Unless there are other sense impairments, the visually handicapped simply rely on their other sensory systems more frequently than do the sighted and they develop them more fully.

Generally, even proficient braille readers proceed at a slower pace than do persons reading regular print. Taped instructional materials are being used with the visually handicapped with increasing frequency. Techniques have been developed to compress speech on audiocassettes. This allows a faster rate of speech (and listening) without distorting voice quality. The procedure enables the blind student to receive information at a rate comparable to sighted reading.

Considerations Regarding Facilities

In helping the visually handicapped student adjust to a particular classroom environment, to the tasks involved in vocational education, and to involvement in a work experience job, several considerations having to do with facilities should be taken into account. Many necessities will have been provided by other school staff, but the vocational teacher should check by asking the student or the special education teacher the following questions:

- **Orientation to the school building**—Has someone (an orientation and mobility specialist) devoted time to assisting the student with orientation to the building and how to get from one class to another? Does the student know where the staircases, restrooms, drinking fountains, cafeteria, etc., are?
- **Orientation to the classroom and/or workroom**—Have instructors or other students assisted the handicapped student in becoming oriented to the classroom, making sure that the student learns the layout of the room and placement of desks, tables, chairs, equipment, tools, machines, etc.? Is it clear to the student just how many and what kinds of equipment, tools, materials, etc., are in the room and available for use?

- *Transportation to and from the work experience job—* Have instructors or someone else assisted the student in making arrangements for transportation to and from the work experience station or in learning how to get there and back independently?

Review

1. Why are orientation and mobility skills important?
2. How can the teacher help the visually handicapped student adapt socially?

ESTABLISHING A PLAN FOR INDIVIDUAL INSTRUCTION

Useful Information and Where To Get It

The instructor should gather information pertaining to the student's academic history, developmental and health history, personal and social adjustment, and vocational readiness. The tables in this section provide a checklist of records and information and a quick guide to sources of material.

The instructor will probably receive information about the academic history of the student not only from formal records but also from those who are or have been involved with the student (see Table 4.1). Although the instructor will be primarily interested in objective recorded information, personal appraisals of the student may be helpful. However, personal opinions of the student's ability and work capacity may or may not be accurate, and should be accepted cautiously.

The student's developmental and health history (Tables 4.2 and 4.3) is important. It helps the instructor understand students' particular visual problems and their relation to individual abilities, capacities, and physical needs. Knowing a student's present level of reading skills and ability to utilize supplementary aids helps the instructor greatly in individualizing instruction and in planning the student's coursework.

TABLE 4.1: Sources of Academic Information.

Academic History	Source
Achievement/ability/proficiency test results	Classroom teachers, special education teacher, principal, counselor
Intelligence test results	Principal, counselor, school psychologist
Courses taken and grades	Cumulative records, special education teacher

TABLE 4.2: Personal Appraisal of Social Development.

Personal and Social Adjustment	Source
Cultural/ethnic factors	Students, parents, school staff
Family situation and status	Student, parents, school staff
Family attitudes about handicap	Student, parents, classroom teacher, special teachers, counselor
Parental involvement in student's education	Parent, classroom teacher, former teacher, student
Behavior with classmates and staff	Personal observations, classroom teacher, former teachers, counselor, other students, school psychologist
Self concept, self esteem	Student, personal observations, former teachers, counselors, special education teacher
Student's attitude about handicap	Student
Hobbies, special interests	Student, personal informal conversations with the student, other teachers, parents, counselor

Before launching a program for the student, the instructor should become fully informed about the student's existing task level competencies, previous vocationally oriented studies, and work relevant experience, including hobbies (see Table 4.4). An individual assessment of the student's vocational and general attitudes, aptitudes, and habits enables the instructor to know how to proceed.

Professional jargon concerning the student's handicap can affect the instructor's understanding of the social problems involved. The professionals themselves (health personnel, psychologist, ophthalmologist, etc.) should be asked to explain in layman terms what the problem means, what the instructor can expect from a student with such a problem, and how to deal with the factors involved.

There will be labels, both professional and nonprofessional, surrounding the student. Although the instructor

TABLE 4.3: Sources of Information on Physical Conditions.

Developmental and Health History	Source
Attendance records	Principal, former teachers, counselor
Physical health information	School health personnel, parents
Ophthalmologist's evaluation and prognosis	School health personnel, student's ophthalmologist, special education teacher
Development of braille and/or large print reading skills; development of other skills in using aids	Student's former teachers, principal's or counselor's records, special education teacher

TABLE 4.4: Vocational Information Sources.

Vocational Readiness	Source
Existing vocational skills	Assessment through observation of and discussions with the student
Previous vocational education courses and performance records	Principal, counselor, former vocational education teacher(s)
General work habits and attitudes	Personal observation, former teachers, supervision of work related experience
Assessment of current vocational aptitudes and attitudes	Observation of and discussions with the student; former vocational education teachers
Previous work related experience	Principal, counselor, former teachers, supervision of work related experience

must know the facts and the terminology, these labels should not be allowed to obscure the individual. The instructor should keep an open mind about the student and develop a picture of the individual as a complete person. The instructor can then work with the student and the professional team to accomplish the work at hand.

It is important to decide what information about the student is constructive and useful in planning vocational training. On the one hand, the instructor will want to be aware of potential limits and to exercise caution; on the other hand, background information also provides a source of ideas and suggests ways to enhance the student's capabilities and, in turn, build a positive self concept.

Review

Four areas of background information have been discussed. As an exercise, and keeping your own instructional aims in mind, list the key things a teacher would want to learn about the student in order to plan an appropriate approach.

Setting Individualized Course Goals

The instructor will first want to discuss with the student the range of course goals available to all students in the class and the objectives outlined to achieve these goals. Next, the instructor will want to decide with the student which of these goals are of personal interest and are feasible.

Personal Development

To a great extent, personal development underlies development in other areas. Vocational and social development depend a great deal on one's personal development.

Instilling qualities such as *initiative*, *self reliance*, and *independence* and clarifying their importance can do a great deal for the student. The students' understanding about the need for these qualities when performing vocational education tasks in the classroom will affect other areas of their lives. Initiative, self reliance, and independence can promote acceptance of responsibilities which, in turn, can build self esteem and self confidence.

An individualized plan for vocational instruction does not need to be complex, but should be tailored to the individual. The following example is drawn from *A Five County Vocational Skills Training Program for the Blind* (1972), an information project document prepared by Gene Russell for the Santa Cruz (California) County Office of Education.

Can you think of other personal and social skills the teacher could impart to the visually handicapped student—skills that would be helpful in gaining acceptance in the work world?

INSTRUCTIONAL OBJECTIVES

Program: Vocational Skills Training Date: January 21, 1972

Pupil's Name: Charles D. Hammer* Age: 17

General Pupil Information:

Charles' vision impairment is due to congenital cataracts. His right eye has only light perception, while vision in the left eye is 5/100.

Instructional Goals:

1. Develop problem solving abilities related to the materials, processes, and products of woodworking.
2. Develop skill in the safe use of tools and machines.
3. Develop skills in communication and sociability.

Instructional Objectives:

1. At the end of the semester, Charles will understand the following major concepts and information concerning woodworking:

- | | |
|--|------------|
| a. Joints | e. Sawing |
| b. Turning | f. Boring |
| c. Finishing | g. Shaping |
| d. Hand Tool Identification, Use, and Care | |

Charles' understanding will be reflected in his receiving not less than a B grade in the class.

2. By the end of the semester, Charles will be able to operate unassisted the following pieces of equipment, performing at least one operation with each, and throughout the semester, without causing bodily injury to himself or his classmates:

- | | | |
|----------------|-------------------|--------------|
| a. Lathe | d. Jointer | g. Table Saw |
| b. Drill Press | e. Radial Saw | |
| c. Mitre Saw | f. Surface Planer | |

3. By the end of the year, Charles will be able to independently ask for and offer assistance to other students 10 times to increase his sociability within a group.

*Fictitious name

Teacher _____

Considering the Instructional Framework*Physical Facilities*

The importance of orienting the visually handicapped student to school and work experience environments has been stressed previously. Also essential is orienting the student to the smaller setting—the actual work area, where learning/doing time will be spent.

It is advisable for the severely visually handicapped student to initially spend time exploring the new environment. The student will need to walk around the room, touching walls, doors, etc., and examining equipment and furniture not only to become oriented to the locations of everything necessary to the task but also to learn the shape, texture, and size of things new to experience. In a sense, this is a rehearsal. Once the student has learned the layout—what and where everything is—

there is little necessity to explore further. It is important to keep this point in mind because many who are not familiar with the handicap picture the individual as needing to grope around the room every day. On the contrary, once visually handicapped people become oriented, they get around with almost as much ease as sighted people.

The layout of the student's own work areas are of paramount importance. Once the student is oriented to the room as a whole, orientation to the smaller individual settings where the student will be working is extremely important. There should be easy access in and around each area and from one area to another, e.g., from desk to machine area. The student should be promptly informed of any physical changes in these individual settings that may interfere with orientation and mobility.

The instructor will want to avoid or circumvent potential problems and hazards in the student's work setting,

and will want to promote maximum efficiency and adequate physical comfort for the most effective use of work space and equipment.

- *The desk.* If possible, the student should be provided with a movable desk that can be adjusted for height, position, and angle. For instance, it may be advisable to raise the desk for a student who must constantly lean over the desk in order to use residual vision. The angle of the desk has to be taken into consideration in solving problems of sensitivity to glare and in providing maximum, evenly distributed light. It is best to provide a desk of light, neutral color, with a dull finish. Portable, adjustable book stands may be helpful also.
- *Seating arrangement/desk placement.* When deciding where the visually handicapped student will sit and where the desk should be placed, the instructor should be sure the student can hear clearly because he or she must rely heavily on the use of the auditory sense. In addition, seating arrangements for the student who has residual vision should include consideration of any residual sight; place him or her near any needed chalkboards, visual media, and teaching materials utilizing large print.
- *Noises.* As indicated previously, the visually handicapped student depends a great deal on sound as a guide for mobility and orientation and as a major avenue for learning. However, the instructor should be alert to extraneous noises that might mask the auditory cues necessary for mobility and for instructional purposes. Such noises should be eliminated or toned down if possible.
- *Safety factors.* The instructor may be apprehensive about visually handicapped students' using special equipment. Fears will probably center on doubts about the students' ability to use tools, machines, etc., without personal injury or damage to the equipment. However, once students have learned the tool or machine—handled it, felt it, been shown its use, and committed this knowledge to memory—they can use many machines with acceptable accuracy. Note that it may be necessary to adapt machines to make this possible. For example, depth of cut on a lathe can readily be set once raised bumps or markers have been added to the calibrated dial on the cutting tool feed crank.

In addition to meeting the visually handicapped person's needs of getting around, using equipment, and learning essential vocational tasks, the instructor must think of safety factors and remain alert to hazards that even the well oriented handicapped student may be subject to. The chief factors to consider are:

- Obstructions or changes in the room.
- Inappropriate or inadequate safeguards on machines.
- Noise that masks a hazard.
- Undue glare and shadow effects that mask a hazard.

Other common sense preventive measures, such as seeing that drawers are not left open, will become ob-

vious on a day to day basis. The instructor may also want to make sure that safety devices on equipment are not just visual ones; auditory and/or tactual safety devices may also be advisable for the visually handicapped student.

Review

- What can the teacher do to orient the student to the classroom or workroom?
- How can the teacher involve classmates in helping the visually handicapped student?
- Name some precautions to be taken so that the student can avoid accidents in getting around the classroom and/or workroom.

Using School and Community Resources

It is clear that resource persons, especially the special education teacher, are important in instructional planning. Not only do they have the information needed, but they will share the instructional tasks. Braille requirements, for example, are a daily concern. The student, the special educator or resource teacher, and an instructional aide customarily handle braille requirements on a routine basis. The vocational teacher's job is to obtain handouts, instructions, and test materials in advance so that there is time to accomplish the braille itself. In order to facilitate the student's work effectiveness, the teacher may want to braille label storage bins or work tools. Resource persons will often help in accomplishing this task.

Of course, other school resources should be considered as well. The media center may provide helpful instructional materials, although the primary modes of learning will be tactile and aural, not visual.

Among the more helpful resources in the community are (a) the Lions Club and similar organizations, which raise funds for equipment purchases or for special activities; (b) volunteer groups that transcribe braille and do audiorecording, (c) the state rehabilitation office and other public or private agencies that provide additional services including temporary instruction in mobility so that the student can, for example, learn the route to a work experience station, (d) the library, through which special listening equipment and materials from the Library of Congress may be borrowed.

Curriculum

In changing the curriculum to accommodate the visually handicapped student, two general principles are important. The first is concreteness—the visually handicapped student may lack a well developed concept of space and form. Generally, things that cannot be touched or heard are difficult to conceptualize and hold less meaning for this student. The use of a model to illustrate the space and form of an object is often helpful. The second principle concerns unified instructions. When a sighted student enters a house, the relationship of walls, floor, roof,

and windows is apparent. The totally blind student lacks this use of sight to unify knowledge as a whole. In order to make everything come together it is important that each task be presented in as logical a manner as possible and be adapted as necessary.

The following examples show several ways to adapt course content (see Hanninen, 1975):

- *Electrical*—An audio circuit analyzer can be adapted with Braille dials; visually impaired students should practice testing the resistance of as many things as possible.
- *Metalworking*—Wheel revolutions on equipment can be explained in terms of the movement of hands on a clock. One quarter turn is equal to 15 minutes, a full turn equals 1 hour, etc.
- *Woodworking*—Simple raised line drawings can be used to enable a visually impaired student to read a plan. These drawings can be made with a special kit available from the American Foundation for the Blind, or with braille paper and perforating wheel.
- *Automotive*—In adjusting the points on an engine, cellophane can be placed between the points and the distributor rotated until the points open and the cellophane can be pulled out.

Specialized Materials and Equipment

The vocational educator should be aware of specialized materials and equipment that can aid instruction and increase the employability of the visually handicapped student. Some examples are:

- *Braille and large print textbooks.* Many textbooks are available both in braille and large print; material that is not already available can be transcribed free by volunteer service groups.
- *Slate and stylus; Braille writer.* The slate and stylus allow the visually handicapped student to jot down short notes in Braille, but are not suitable for manuscript writing; the braille writer, on the other hand, has levers that operate manually to produce braille on plastic sheets much as a typewriter produces typed copy.
- *Audio aids.* Cassettes and recorders are basic tools for the visually handicapped; recordings enable a student to keep a verbal record of most material presented to sighted students in printed form.
- *Closed circuit television (CCTV) and other magnifying aids.* CCTV is used primarily for magnifying print for persons with low vision. Other magnifiers of glass or plastic can be used to view objects as well as for reading material.
- *Abacus and talking calculator.* The abacus has long been used by visually handicapped persons for making mathematical calculations. However, several calculators with audible output are now available and can greatly aid the visually handicapped in jobs requiring mixed mathematical calculations.
- *Electronic reading aids.* The Optacon and Stereotoner are devices that enable blind persons to read standard ink print; each has a small probe that passes over ink

print, converting it to tactile images in the case of the Optacon, and to auditory tones in the case of the Stereotoner and, although they are not inexpensive, these devices and more advanced aids should substantially increase the employment potential of the visually handicapped. One such advanced device is the Kurzweil Reading Machine, which directly converts printed text into spoken words.

- *Travel aids and electronic environment sensors.* The long cane aids safe and efficient travel; the trained long cane user, moving the cane from side to side, is able to locate travel landmarks and identify hazards in the path. Electronic environmental sensors such as the Mowat Sensor, the Nottingham Obstacle Detector, the Laser Cane and a sonic guide work by emitting ultrasonic signals that bounce off objects in the environment, helping the blind traveler to identify obstacles and/or shapes.
- *Special vocational aids.* The *Annual Catalog of Aids and Appliances for Blind and Visually Impaired Persons*, distributed by the American Foundation for the Blind, contains a section on vocational aids including specialized writing and drawing aids; soldering irons; wrenches, screwdrivers, and braille rulers; tapes, squares, and marking gauges. See Figure 4.4 for examples.

Methodology

Much of the vocational teacher's standard instructional approach can be used without change. However, common sense suggests that the instructor:

- Verbalize visual cues (e.g., hand movements) during demonstrations.
- Avoid abstract terms (e.g., "this fastens on there").
- Explain how similar parts or processes can be distinguished by touch or sound.
- Encourage sighted classmates to be helpful but not to do the student's work.
- Seat the visually impaired student in a position to hear clearly; adequate lighting is also important.
- Always address the student directly by name; avoid talking through another person.

Review

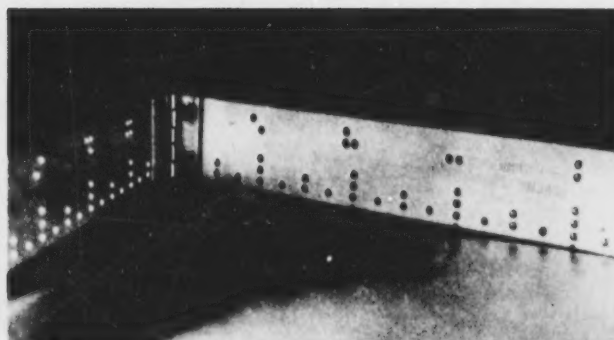
- From what organization can a catalog of aids and appliances for the blind be obtained? What person in the school district might already have such a catalog?
- In giving a written vocabulary list to the totally blind student, what special procedures would probably be appropriate? Who else might become involved, and how?

CARRYING OUT A PLAN FOR INDIVIDUAL INSTRUCTION

Depending on the particular area of instruction, the instructor will have checklists, tests, and other measure-



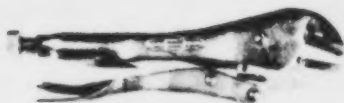
Starrett Micrometer



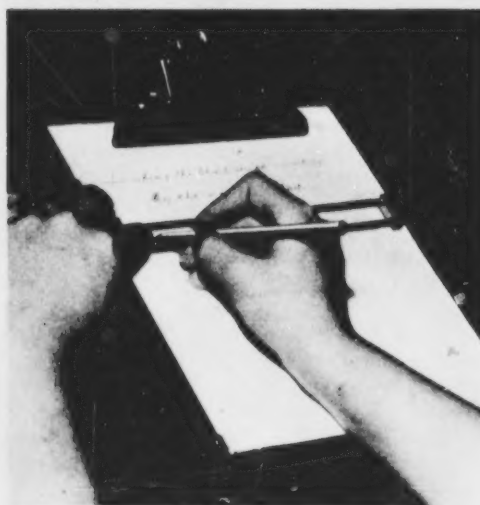
Pocket Folding Rule



Steel Tape Measure



Pressure Lock Wrench



Script Guide



Stanley Combination Square



Telescopic Click Rule

FIGURE 4.4: Examples of Special Equipment Used by the Visually Handicapped Available from the American Foundation for the Blind. (Photographs Courtesy of the American Foundation for the Blind.)

ments of progress and skill attainment for the entire class, including modified versions for the visually handicapped student. These should be administered or checked at scheduled intervals. The instructor should be prepared to modify testing schedules for the visually handicapped student who should not be penalized for this requirement. Similarly, any product that is prepared by the student should be judged not only on absolute quality but also on the difficulty involved. (For example, in woodworking, smooth sanding should really be smooth, because it can be touched, but varnishing will probably be less perfect because the student can not see it.) Task assessment should be frequent and nonthreatening.

Another indication of progress and growth will be an assessment of the student's employability. This type of assessment is vital to eventual placement of the visually handicapped student. The employer will want evidence that the applicant has experience in job relevant skills and is proficient in them.

In assessing the visually handicapped student's progress through tests, checklists, and performance observation, the instructor must always use the criteria especially set for the student, rather than the norms set for sighted students or other visually handicapped students. In other words, the instructor is concerned only with whether the student (a) has met the standards mutually agreed to, and (b) whether that achievement is of an acceptable level for employment.

Increasing Teaching Effectiveness

Efficient utilization of information and resources can contribute greatly to teaching effectiveness.

Background Information

In planning individual instruction for the visually handicapped student, the teacher may have gathered a considerable amount of background information about the student—perhaps more than is immediately needed. As the teacher begins to carry out the instructional plans, it may be necessary to review some of the personal factors that could be affecting that student's performance. The teacher may also find that there are gaps in the information acquired and may want to discuss with the student or a resource person (the student's ophthalmologist, the special education teacher) any problems encountered.

Overcoming Problems

In the process of teaching visually handicapped students, educators may face problems they did not anticipate. Following are some areas of potential concern, and some suggestions for dealing with these concerns.

Problem: Many textbooks are available in braille from either the state clearinghouse depository or directly from the American Printing House for the Blind. However, a specific textbook may not have been transcribed into braille.

Solution: Volunteer braille transcribers can solve this problem and the special educator can identify such volunteer groups in the area. Braille transcribing is time consuming, and adequate time should be allowed. (For general reading that does not require referring to specific passages, the book might be recorded on tape.)

Problem: An orientation and mobility specialist may not be available in the school district, and the visually handicapped student may have had little training in these skills.

Solution: Have the school ask the nearest office of the department of rehabilitation to make orientation and mobility training available to the visually handicapped student. In the meantime a sighted guide can be provided for the student. The handicapped student grips the guide (a sighted student) firmly but gently just above the elbow, and walks half a step behind the guide. The guide should walk at normal speed, while the student pays attention to the guide's arm motions, which suggest what the guide is doing or is about to do. A greater degree of independence should be the goal, therefore the student should become aware of routes being taken as well as significant landmarks, buildings, and points of interest along the way. In time, the visually handicapped student will get an idea of where things are and will be able to move more independently in the environment.

Problem: Teaching a visually handicapped student will require more time and extra supervision.

Solution: This student may require more individual attention initially when new tasks or machines are to be learned, but once the student understands the task, extra supervision or attention is seldom needed. Generally, the visually handicapped student should perform close to the level expected of sighted students. Work should be judged on its own merit and not accepted at an inadequate level of quality if better work was possible.

Problem: The instructor is more than willing to accept a visually handicapped student in class but does not completely trust the student around machinery. How can the student safely operate the tools and instruments designed for sighted students?

Solution: Statistics from insurance companies and from industry, business, and government surveys clearly show that the visually handicapped as a group are safer workers than the sighted (Russell, 1972). Of course no student, sighted or otherwise, should operate any tool or machine without prior study of how the machine operates, but visually impaired students can and do operate power machinery with safety features, proper tools (such as the click rule), and appropriate training.

Review

- Assume that the visually handicapped student did poorly while trying to pass a particular performance

objective in class. What factors might cause this, and what could be done about it?

- Testing of outcomes reveals information about the student and the course. Discuss how nonemployability as an outcome could reflect on student and course.

STUDY QUESTIONS

Problem 1

A pamphlet put out by the American Foundation for the Blind indicates the visual requirements for selected jobs in the hospitality industry. Here are three jobs excerpted from the pamphlet:

Pantry man or pantry girl—Travel vision and limited ability to read normal size ink print. Prepares salads, canapes, and other cold dishes; makes sandwiches on short order; prepares tea, coffee, and other beverages; slices cold meats and cheese; supplies waiters with desserts. Because ingredients in some salads call for seafood, pantry man removes shells from shrimp and lobster and bones the fish. In some instances one person is assigned to making salads only and is hired full time as salad worker.

Room clerk—Requires sustained ability to read normal size ink print. Rents and assigns rooms to persons applying in person, by phone, or by letter. Duties frequently include typing, filing, and other clerical functions and may involve operating the switchboard. When specific responsibilities are limited and call for a lesser degree of communicative skills, an individual with a minimum of reading ability may be able to perform successfully.

Floor housekeeper—Requires travel vision and limited ability to read normal size ink print. The floor housekeeper supervises and instructs housekeeping personnel, inspects their work, and reports to head housekeeper; receives information of guest departures from the front office; and fills out various forms and reports.

These guidelines are general and not necessarily applicable to particular blind or visually impaired students. Assume then, that a work experience coordinator is teaching a totally blind student who is interested in hotel/motel work and appears to have the potential to succeed in that business. How might the coordinator:

- Decide which of the three areas offers the best chance for the student getting off to a good start with a new employer?
- Reassure the employer that the blind student can actually do the job and will not be a burden?
- Modify training procedures to prepare the trainee?

Problem 2

In the second week of school, the special education teacher asks the vocational teacher to include a visually

impaired student in woodworking class. The student is bright, hardworking, and has a father in the building construction business. For each of the following three topical areas indicate what the vocational teacher should ask the special education teacher, then explain what significance or impact the question(s) might have on the instructional approach.

- Orientation and mobility skills.
- Degree and status of the disability.
- Setting goals and criteria.

Problem 3

An instructor with a student who is visually handicapped needs to determine that student's readiness for vocational training in computer programming. How might the instructor assess the student in terms of (a) career awareness, and (b) need for adaptive devices? How might the instructor identify appropriate performance tests and work sample systems?

Problem 4

A visually handicapped student is graduating and has applied for a business machine operator's job she heard about. The instructor knows her to be well qualified. What action(s) might the instructor take upon learning that she might lose the job because of

- Employer doubts that she could "carry her weight"?
- Inability to transport herself to the place of business?
- Resistance by coworkers?

SELECTED PUBLICATIONS

Aids and appliances for the blind and visually impaired. New York: American Foundation for the Blind, Inc., 1977.

This 32 page catalog lists more than 300 items for use by the visually handicapped. Available at no charge from AFB, the catalog also contains a listing of other suppliers of aids and appliances for the blind and visually impaired.

Clark, L. L. (Ed.). *International catalog: Aids and appliances for blind and visually impaired persons.* New York: American Foundation for the Blind, Inc., 1973.

This publication lists distributors of aids and appliances for the visually handicapped. In addition to a section on vocational aids, the catalog contains sections on low vision aids, money handling, and telephone aids.

Davis, F. E., & Lappin, C. W. *Educational aids for visually handicapped.* Instructional Materials Reference Center for Visually Handicapped Children, 2nd Edition. Louisville KY: American Printing House for the Blind, 1971.

A catalog of sources of educational materials and aids for the visually handicapped. Contains a section on vocational education materials.

Hanninen, K. A. *Teaching the visually handicapped*. Columbus OH: Charles E. Merrill, 1975.

This textbook presents instructional methods and materials and describes their use in specially designed curricula and programs. Attention is devoted to adolescent problems, school adjustment, mobility and orientation, reading, listening, writing and spelling skills, and braille. Sections on curriculum adaptation in areas such as home economics and physical education are also included.

Hill, E., & Ponder, P. *Orientation and mobility techniques: A guide for the practitioner*. New York: American Foundation for the Blind, 1976.

The ability to move from place to place easily and safely is important to the vocational success of blind workers. Although intended primarily as a manual for persons trained in orientation and mobility techniques, this book serves as a useful reference for others working with blind persons who need to understand the mobility training process.

Lambert, R. H., Tindall, L. W., Davis, K. E., & Ross-Thomson, B. *Vocational education resource materials. A bibliography of materials for handicapped and special education (2nd ed.)*. Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin-Madison, 1975 (ERIC Document Reproduction Services No. ED 123 839).

The bibliography contains 1,621 references for materials related to vocational and technical education of handicapped students. Entries are coded by Office of Education Curriculum Codes and Educational Resources Information Center descriptors. Materials can be located by specific skill areas (e.g., communication skills, interpersonal and behavior coping skills), by specific handicap (e.g., visually impaired, hearing impaired), or by particular type of material (e.g., program development and administration, software instructional materials/devices).

Lambert, R. H., Tindall, L. W., Gugerty, J., & Strey, G. *Vocational education resource materials. A bibliography of materials for handicapped and special education (supplement to 2nd ed.)*. Madison: Center for Studies in Vocational and Technical Education, University of Wisconsin-Madison, 1976.

This publication is to be used in conjunction with the second edition.

Lowenfeld, B. *The visually handicapped child in school*. New York: John Day Co., 1973.

The text consists of 11 author contributed chapters intended for training programs in special education, rehabilitation counseling, social work, nursing, and parent education. A chapter is given to various forms of psychological and educational assessment such as

measures of learning ability, special abilities, social competency, and personality. The use of sensory perceptual abilities is examined in a chapter on the visual sensory system; tactual kinesthetic, auditory, and other sensory systems; and concept development and cognitive organization. Among topics discussed in the chapter on communication skills are essential factors in communication, symbols of communication, listening, reading, and speaking. Mobility and life adjustment skills are discussed in the chapter on life adjustment.

Martin, G. J., & Hoben, M. *Supporting visually impaired students in the mainstream: The state of the art*. Reston VA: The Council for Exceptional Children, 1977.

In addition to a thorough discussion of the advantages and limitations of mainstreaming visually impaired children and descriptions of successful programs, this book deals with some of the most common concerns and questions posed by regular teachers. The question and answer format used in the chapter "Questions Teachers Ask" is extremely effective in getting at the heart of what people who are inexperienced in working with handicapped children want to know.

Russell, G. H. *A five county vocational skills training program for the blind: Project document*. Santa Cruz CA: The Santa Cruz Office of Education, 1972 (ERIC Document Reproduction Services No. ED 073 579 and ED 075 580).

This is a 3 year project designed to provide vocational training to visually impaired students in a five county area, provide inservice training to regular vocational educators working with blind students, and develop guidelines for organizing and implementing such a program.

Scholl, G. S., & Schnur, R. *Measures of psychological, vocational, and educational functioning in the blind and visually handicapped*. New York: American Foundation for the Blind, 1976.

This manual presents a list of approximately 200 available measures and instruments that have been used to assess educational, psychological, and vocational functioning in visually handicapped children and adults. Test entries usually include test title, a brief description, name, and address of the distributing agency, and a list of references relating to the particular test. Also provided are a list of recommended reading, a list of general references, and blank forms for reader suggestions.

Vail, M., & Townsend, J. L. *Services to the blind: A community concern. A report from prime study group III of the Institute on Rehabilitation Services*. (DHEW Publication No. (SRS) 73-25077) Washington DC: US Department of Health, Education, and Welfare, 1973.

Considered in this report are current concerns, issues, and practices related to the rehabilitation of the blind.

Noted is the increasing number of blind reported rehabilitated each year and emerging occupational areas such as the health manpower field, the informational service expediting field, and computer sciences. The history of private and public agencies serving the blind is reviewed. Manpower and training needs are discussed with emphasis on implications of the phasing out of federally funded training programs. The book focuses on the underserved blind population, including the severely multiply handicapped, the older blind, and low achievers, and emphasizes the need to research and develop the specialized programs for these groups.

Volunteers who produce books: Braille, large type, tape.
Washington DC: Library of Congress, Division for the Blind and Physically Handicapped, 1973.

A listing of services provided to the handicapped by the Volunteer Services Section of the Library of Congress. Regional centers are also listed by state.

RESOURCES

American Foundation for the Blind
15 West 16th Street
New York NY 10011

This foundation is a national information and research agency which coordinates local and regional agencies serving the blind. It maintains library services and develops and manufactures books and special aids for the visually handicapped.

American Printing House for the Blind
1839 Frankfort Avenue
Louisville KY 40206

A nonprofit corporation, the American Printing House for the Blind is one of the oldest national agencies for the blind in the United States, and is the largest publishing house for the blind in the world. This agency provides products such as Braille books, cassettes, talking books, Braille Writers, and electronic equipment to agencies and schools for the blind and physically handicapped.

Braille Institute of America, Inc.
741 North Vermont Ave.
Los Angeles CA 90029

A nonprofit organization, this institute is involved in teaching basic training skills and is concerned with job development and placement for visually handicapped persons.

Library of Congress
Division for the Blind and Physically Handicapped
Washington DC 20542

This library maintains regional centers which produce books in braille, large print, and tape. The centers maintain a library of transcribed materials and, on request, provide materials to meet special and individual needs.

National Braille Association
654A Godwin Avenue
Midland Park NJ 07432

The National Braille Association, a volunteer organization, provides and coordinates volunteer services in the production and distribution of reading materials for the visually handicapped. The organization also prepares special vocational materials for blind workers.

UNIT 5

Students with Mental Retardation

Claudette Smith

The Educator, the Student, and
the Task

Establishing a Plan for
Individual Instruction

Carrying Out a Plan of
Individual Instruction

THE EDUCATOR, THE STUDENT AND THE TASK

Understanding the Mentally Retarded Student

Some societies have respected and protected the mentally deficient, but in most cultures competence has been rewarded while impaired functioning has been socially scorned, if not punished. Obviously, the standards used to determine impaired functioning vary with the social demands and values of the community. Physical stamina, acute vision and hearing, and agility are necessary for successful participation in a hunting and gathering economy. Where agriculture is the principal occupation, moderate mental retardation may go unnoticed, provided the retarded person is able to do an adequate share of the physical work. The complexity of modern technological society has increased the value placed on intellectual competence, while the social rewards for physical strength have decreased. To a degree, compulsory education supports the demand for skilled workers and those who are less able to perform academically may require special assistance if they are to develop skills and behaviors that qualify them for full participation in society. Ours is a culture in which personal work is frequently associated with vocational success; thus, it becomes vital that everyone be provided with training that can lead to employment and independence.

Vocational educators are not alone in admitting they know very little about mental retardation. A survey in a midwestern state (Bradley, 1964) found that only 1 person in 10 had any specialized knowledge about this handicapping condition. Mental retardation has long been surrounded by misinterpretation, controversy, and confusion.

What is Mental Retardation?

Mental retardation is a term generally used to describe persons with limited intellectual ability and is frequently associated with delayed maturation and social development. Modern attempts at delineation and classification have resulted in a confusing array of groupings and terminology. This is not surprising because many disciplines, including medicine, psychology, sociology, law, and education, have a vested interest in the subject. The American Association on Mental Deficiency (AAMD), an organization representing concerned professionals, has suggested the following definition:

Mental retardation refers to significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period. (Grossman, 1973, p. 5)

The main criteria for classifying a student as retarded are:

- Academic failure or difficulty (grades and achievement scores fail to indicate academic growth).
- IQ score significantly below average.

The following breakdown shows the educational classifications generally used for persons with measured low intelligence:

Educational Classification	Degree of Retardation	IQ Range
Educable mentally retarded (EMR)	Mild	50-79
Trainable mentally retarded (TMR)	Moderate	25-49
Dependent mentally retarded	Severe or Profound	Below 25

Poor performance on an IQ test is not enough reason for regarding a student as mentally retarded. In practice, about two thirds of those who score below 80 on such tests have not been labeled mentally retarded because they have been able either to make acceptable progress in school or to demonstrate adequate personal and social adjustment (Haring, 1974).

• Deficits in adaptive behavior.

Deficits in adaptive behavior include poor perceptual motor development, inadequate communication skills, immature reasoning and judgment, and poor personal social adjustment.

Causes of Mental Retardation

More than 200 causes of mental retardation have been identified. The conditions associated with mental retardation can occur during the prenatal period, during the birth process, or during infancy and early childhood. Severe retardation is usually associated with injury or infectious disease, incompatibility of blood type, nutritional deficiency, metabolic disorders, chromosome abnormality, or other biological conditions. Mild retardation, on the other hand, is seldom traceable to a specific physical cause. A family history of mental deficiency, mild vision and hearing problems, substandard nutrition and living conditions, deprived cultural environment, and unstable home life are factors associated with mild retardation. Mild retardation seems to result from a complex interaction of hereditary and environmental conditions, and there is no conclusive evidence that any one factor directly causes the handicap.

The prevalence of mental retardation in the general population is estimated to be approximately 3%. Severe retardation accounts for a very small proportion of mental handicaps and tends to be evenly distributed among all cultural and economic groups. Approximately 89% of the mentally handicapped are considered mildly retarded. Unlike severe retardation, the mild retardation seems to occur much more often in disadvantaged communities, in the inner city and depressed rural regions, and in children from unstable home environments (Kirk, 1972).

Those who work with the mentally retarded generally agree that both heredity and environment play an important part in intelligence. In other words, while a student's ability to learn is influenced by biological makeup, it is also profoundly affected by environment.

Whether retardation is biological or environmental in origin, the mildly retarded student in your class is able to learn. In teaching this student, emphasis should be placed on the student's educability, rather than on deficiencies.

Review

- What is meant by the term *adaptive behavior*?
- Why does mild mental retardation become more of a problem when a child enters school?
- What causal factors are believed to be significant in cases of *mild* mental retardation?

Characteristics of Students with Measured Low Intelligence

It is understandable that the vocational educator is concerned about the differences that should be taken into account when teaching the mildly retarded. Mildly retarded students have a serious learning handicap and are not as personally and socially mature as their nondisabled classmates. However, as a group they are more like regular students than they are different from them. With their individual strengths and weaknesses, the mildly retarded students are a heterogeneous group who differ as greatly among themselves as do their nondisabled classmates.

Nancy is a 15 year old with many of the same dreams other girls her age have. Like most of her friends, she talks on the telephone for hours about boys, clothes, and her favorite rock stars. Nancy was in special classes for the educable mentally retarded until she was in eighth grade. At that time she began to participate in work study, a special program for handicapped students. This involved attending some regular classes and working at jobs in the cafeteria and in the school office. She continued to work with the special education teacher in classes on basic academic skills, self help skills (cooking, personal grooming, money management), and prevocational training. The special education teacher says that Nancy's shyness and lack of self confidence could limit her vocational development. One of the regular classes Nancy attends is business education. This year she is learning to type and to prepare envelopes and packages for mailing. Her parents are supportive and encouraging, although they realize that Nancy has to work very hard and that she may have difficulty finding a job. Although her academic potential is limited, she is learning vocational skills and has a fair understanding of the jobs that might be available to her. The work experience coordinator is optimistic about finding an employer who will be willing to place Nancy in a trainee position as a messenger or mail room clerk.

Charles is a 19 year old high school senior who likes to work on cars. Charles reads at third grade level, has very limited math skills, and is classified as educable mentally retarded. Because he has difficulty understanding how an engine operates, it is unlikely that he will ever be a full fledged auto mechanic. He is in a vocational program in automobile repair, however, and has learned to do oil changes, steam clean an engine, and change and rotate tires. The instructor is sure that Charles can learn to tune engines and has worked out a plan that breaks each operation down into very simple steps. He learns slowly and is easily frustrated when he makes a mistake. Last year, on his own, Charles got a part time job in a small garage. He helped clean up and assisted in engine repairs. Although his work was acceptable, Charles frequently came to work late and lost the job when he became angry and started yelling and throwing cleaning rags at a coworker. His instructor feels that if Charles can develop a sense of time and better self control, he will be a dependable and competent employee.

Nancy and Charles are typical of mildly retarded students participating in regular vocational education programs. They both have difficulty with academic subjects and social adjustment. On the other hand, each is an individual with a unique set of capabilities and limitations.

Review

Based on this information about Nancy and Charles, what entry level jobs might they be trained for?

Characteristics of the Mildly Retarded

While it is unlikely that a generalized description will fit any individual student, the mildly retarded as a group have some characteristics in common.

Physical characteristics. Most mildly retarded students are of average height and weight for their age. Their physical appearance is normal, although there is evidence that in perceptual and motor skills they develop more slowly than do children of normal intelligence. Mildly retarded students are generally delayed in developing hand eye coordination and visual and auditory discrimination, but with proper training they can learn many complex motor skills.

Intellectual characteristics. The mildly retarded student's intellectual development is considerably slower than that of the regular student. The retarded student learns more slowly and is more easily confused than are students of normal intelligence. Given repeated trials, however, the retarded student's performance of routine tasks may be comparable to that of the nonretarded student. The retarded person tends to have predictable problems in dealing with abstract concepts, following directions, developing observation skills, memorizing information, and generalizing learned skills to other similar situations. This student often misses what appears obvious to

everyone else, and may not realize when to try a new approach to a problem. The teacher should keep in mind that whatever the task, the retarded student must see it and do it repeatedly to learn it. Mildly retarded students have a short attention span, although this may sometimes be caused by their being given tasks that are too difficult, too easy, or otherwise inappropriate.

Academic characteristics. Academic achievement is directly related to intellectual development, and mildly retarded students progress slowly in school. They have deficiencies in basic academic areas such as reading, writing, and math. They also have difficulty communicating their ideas and listening to others. However, while the retarded students' academic achievement is limited by their intellectual development, it is also strongly influenced by personal and social experiences.

Personal-social characteristics. Mildly retarded children mature slowly. At every stage of development they are expected to behave beyond their physical, mental, and emotional capabilities. Academic difficulties tend to increase as they progress in school, and by high school mildly retarded students have usually acquired an ingrained sense of failure. Because of limited reason and judgment, their behavior is often inappropriate. Although there is no evidence that low intelligence per se produces any particular personality characteristics, the experience of chronic confusion and failure understandably shapes the retarded individual's attitudes and behavior. The greater incidence of emotional and behavior problems among the retarded probably results from the high degree of stress and frustration. Although they may appear to lack motivation, retarded students often display remarkable ingenuity in avoiding situations that may lead to further failure. The need to avoid failure may become so great that the student simply refuses to try anything. This pattern of failure and withdrawal, often called the *defeat cycle*, characterizes the experience of many retarded persons.

The vocational educator is in an excellent position to help the student interrupt this defeat cycle. By providing concrete tasks which the retarded student can see and do, the vocational program may lead the mildly retarded student out of the defeat cycle toward a meaningful and productive adult life.

Occupational characteristics. Surveys show that 80% of persons who have been classified as mentally retarded are eventually employed in unskilled or semiskilled jobs (Kirk, 1972). The evidence seems to indicate the following:

- When properly placed, the retarded perform as efficiently as do persons of normal intelligence.
- On simple or routine tasks, their efficiency often exceeds that of nonhandicapped employees, and they tire less quickly.
- On routine tasks, the retarded show a high degree of job satisfaction and have lower rates of tardiness, absenteeism, and job turnover than do employees of normal intelligence.

- Failure on unskilled or semiskilled jobs is usually related to personal, social, and interpersonal characteristics rather than to inability to perform assigned tasks.
- A stable family situation and some contact with rehabilitation agencies greatly enhances the retarded person's vocational potential.

Brolin (1976) reports that in a federal program (where the usual civil service hiring procedures were eliminated) nearly 5% of the mentally retarded persons involved received higher than average ratings and more than 13% were promoted. Seven percent were laid off; social adjustment problems played an important role in these cases.

Range of capabilities. Although all mildly retarded students are behind their nondisabled classmates in intellectual development, they vary greatly among themselves in ability and personal maturity. The academic and personal growth of all retarded students is strongly influenced by home life and school experiences. If these are positive, the student has a much better chance to become a responsible adult.

- Reading and communication skills and motor coordination are important for vocational development. Mildly retarded persons with serious problems in these areas can and should be provided training to remedy the deficiencies.
- Retarded persons vary greatly in self understanding, temperament, and emotional maturity.
- Like nondisabled persons, the mildly retarded differ greatly in physical stamina and persistence necessary for carrying out job tasks.
- Students who have had prevocational training and experiences will be much more aware of occupational areas, work responsibilities, and realistic vocational goals than will those who have not.

Review

- What is the significance of the statement that "about two thirds of those who score below 80 on IQ tests have not been labeled mentally retarded"?
- Describe the defeat cycle that characterizes the experience of the retarded student. How can the vocational educator help to interrupt this cycle?
- What do occupational surveys indicate as the primary factor in the failure of retarded persons to perform successfully in unskilled or semiskilled jobs?

Considering Job Tasks

Properly trained and placed retarded persons are able to perform a variety of job tasks successfully, and the first question before the vocational educator is how to teach skills in a particular vocational area to retarded students. The instructor must consider very carefully the nature of the specific tasks the student will need to master in order to become competent in a particular vocational area.

Some technical skills that require theoretical understandings and independent judgments are beyond the capabilities of many mildly retarded students. Nevertheless, it can be amply demonstrated that retarded students can learn complex skills and perform them competently and reliably when properly trained.

It is often assumed that the specific level of ability required to perform a given task is known. As a matter of fact, the area of job skills analysis is still evolving and many tasks when analyzed are well within the capabilities of the mildly retarded student. Following are some factors to consider in developing an instructional program for the mentally handicapped.

Basic Skills Considerations

Given that the mildly retarded student's levels of reading comprehension, computation skills, and general information and reasoning abilities will be below those of nonhandicapped classmates, the instructor must determine the level of basic skills necessary for specific job tasks. In performing a task, will the student be required to follow written instructions? Will it be necessary to measure or weigh or count things? Is sorting or arranging in a particular order a task requirement?

Sensory Motor Considerations

There is a good chance that the mildly retarded student will be able to handle manual operations with considerably less difficulty than those tasks requiring academic proficiency. However, sensory motor skills develop slowly, and there may be problems with motor tasks considered appropriate for that age level. Therefore, in analyzing a task the instructor should be aware of movement and coordination requirements. Does the task involve fine motor skills such as manipulating small parts or tools like nuts, bolts, and tweezers? Does it require complex visual motor coordination such as watching dials or controls while operating equipment? What general level of coordination is required? Will hands and feet have to be used at the same time?

Work Tolerance Considerations

The ability to complete a task is largely a result of physical stamina and motivation. Obviously, some tasks require considerable physical strength, for carrying or lifting. While within the physical capacity of a student, other tasks may call for an extended expenditure of energy. In evaluating a task the instructor should consider not only how much strength is required, but also what kind and for how long. Since the retarded student's physical capabilities are much like those of the nonretarded, this should not present a serious problem.

Motivation Considerations

Persistence at a task depends largely on motivation; it is influenced by personal considerations such as maturity, self confidence, and rapport with the instructor, and by the appeal of the assignments given. Generally, retarded

individuals are more satisfied performing repetitive tasks than are persons of normal intelligence. They do not enjoy difficult or unpleasant working conditions any more than anyone else does. Retarded students may not be aware of external motivational factors inherent in a job (high wages, good fringe benefits, opportunity for building job skills) and may develop more positive attitudes toward work if such job benefits are explained to them.

Cognitive Considerations

Mentally retarded students' intellectual abilities are limited, but many complex tasks can be learned if careful consideration is given in advance to potential problem areas.

- How concrete is the task? Are the required operations observable and easily demonstrated? Will the student need an understanding of abstract processes in order to perform the task? Retarded persons have difficulty comprehending processes, while concrete actions are more readily observed and understood.
- How complex is the task? How many separate operations are required? If several operations are required, are they related to each other in a way the student can easily see and understand?
- Is the task repetitive or does it involve a series of operations? A repetitive task may be learned easily, while a series of different operations must be broken down, allowing adequate learning time for each one.
- Is this task similar to one that the student already knows how to do? While the retarded student has difficulty generalizing previously learned skills to a new task, the learning of new tasks is made easier if it is pointed out that the task is like something he or she already knows how to do.
- Does the task require independent judgments? Will the student have to make decisions at points along the way in order to complete the task? The retarded person may become confused when presented with a situation requiring a flexible problem solving approach.
- Is the task relevant to the learner? Is the task clearly related to a goal the student wants to achieve? A student may not readily see the connection between a specific task (stacking dishes) and a long range employment goal (a job in a hotel or restaurant).

Personal-Social Considerations

The mildly retarded student probably is not as mature as the student of normal intelligence. Although the student may appear for the most part to be pleasant and cooperative, his or her emotional stability and social judgment may not be taken for granted.

Communication Considerations

The retarded student has limited verbal skills. How much does performance of the task depend on written or oral communication? Will it be necessary to use the telephone, write messages, work reports, or fill out forms? Will the work depend on receiving frequent verbal feed-

back? If so, is it likely to be in terms the retarded person can understand?

Facilities Considerations

Is the student familiar with the facility, his or her own work area, locker, tools and supplies? If the student will be required to travel to a work assignment, is transportation available?

The vocational educator serving mildly retarded students in a regular class should have a positive attitude about what the student can be taught, understand mental retardation and how it affects vocational development, and understand the level of ability required to perform specific job tasks.

Review

Choose a job task in a vocational field and analyze it in relation to the level of ability required in the following areas: basic skills, sensory motor development, work tolerance level, cognitive ability, personal and social maturity, and communication skills.

ESTABLISHING A PLAN FOR INDIVIDUAL INSTRUCTION

The vocational teacher's understanding of mental retardation and how it affects vocational development is basic to planning a program of instruction for mentally handicapped students. Whatever level of intellectual potential, students learn in their own individual ways. The regular curriculum is designed to meet the needs of individual students; this flexibility is even more important in modifying a program for the mentally handicapped.

The key word is *modification*. In planning instruction for the mildly retarded student, the teacher will need to consider regular curriculum and training procedures in light of what is known about mental retardation in general and the individual student in particular. The teacher will not have to set up a special program or invent a new curriculum.

In modifying the regular program for mildly retarded students, the teacher will need to

- Obtain basic background information about the student.
- Set goals and criteria appropriate to the individual.
- Adapt the curriculum.
- Contact persons and agencies for assistance.

Useful Information

Information about the student's academic history, developmental and health history, personal and social development, and vocational readiness may be obtained from various sources. Conferences with the student and other informed persons, especially the special education

teacher, are valuable. Do not overlook the use of objective tests of ability, proficiencies, and interests. Remember, many, if not most, mildly retarded students may not be sufficiently aware of vocational opportunities to formulate realistic goals. Also, simple observation may reveal more about what retarded students cannot do than what they can do.

Academic History

In planning a program of individual instruction, the teacher will probably want to look at records of past school performance.

- Achievement tests are probably the method most widely used to assess basic academic skills and the grade level at which a student reads, communicates, and does math.
- The student's past grade records indicate actual academic performance and suggest special interests and abilities.
- Reports from other teachers are useful; keep in mind that information from others may be biased, but do not disregard it.

Developmental and Health History

An accurate picture of the student's physical condition and level of development may reveal associated problems that are correctable.

- The student's general health should be checked and conditions such as seizures, chronic illness, or limited strength should be noted if they may affect vocational goals or employment.
- If the student has vision or hearing problems, check to see if remedial treatment may have been prescribed and carried out.
- If speech problems are indicated, they may be corrected by speech therapy or surgery.
- Check for evidence of brain damage or neurological impairment which might affect physical coordination. Physical therapy and home exercises can often improve motor skills.
- If attendance records show frequent absence due to illness, check to see if the condition causing absences may be treatable.

Personal and Social Development

Vocational failure of retarded persons is frequently due to poor personal and social development. Any serious attempt to prepare the retarded for employment must take this into account.

- Some tests of social maturity and vocational readiness are effective with the mildly retarded and can indicate the student's level of personal and social development.
- Counseling records can indicate areas of social maladjustment such as delinquency, disruptive behavior

in school, social isolation, and emotional disturbance.

- Students from ethnic or racial minorities may have adjustment problems associated with conflicting social values or have difficulty with standard English.
- Parents' attitudes toward the handicapped student and a stable, supportive home environment are important factors in personal and social development.

Vocational Readiness

Retarded students are often unaware of employment opportunities and responsibilities. Prevocational training, work evaluation, skills tests, and work experience can help students to develop work readiness before vocational training begins.

- Talk with the student. Try to obtain some expression of particular vocational interests. Does the student seem to have a realistic picture of his or her own abilities and jobs that might be available?
- Vocational aptitudes may be indicated by skill tests and work sampling.
- The student who has had prevocational training should be better prepared for job training than one who has not. Has the student had any prevocational training? This includes awareness of vocational areas, health and safety practices, following directions, understanding employer/employee relations, and job hunting skills.
- Does the student have job skills acquired in previous vocational education courses and work related experience?

Where To Get the Information

Table 5.1 lists some sources of information.

How To Interpret the Information

A team approach should be emphasized in planning and implementing the program of instruction. The teacher should first enlist the cooperation of the special educator in interpreting the information, setting individual goals, developing a workable plan of instruction, and dealing with any problems that arise.

Review

- What background information would help the teacher in setting up a plan of instruction for a mildly retarded student?
- What school sources should be contacted for the following information?
 - a. Achievement test scores
 - b. General physical health
 - c. Attendance
 - d. Social adjustment
 - e. Prevocational training

TABLE 5.1: Sources of Information.

Area of Information	Sources
Academic History	
Achievement test scores	Special educator, work study coordinator, counselor, psychologist
Courses taken, grades	
Teacher's reports	
Developmental and Health History	
Mental ability, adaptive behavior	Special educator, counselor
General physical health	School nurse, school health records, private physician
Vision hearing, speech	Ophthalmologist, speech and hearing therapist
Physical coordination	Physical education teacher, physical therapist
Attendance	Counselor
Personal and Social Adjustment	
Objective tests of development	Special educators, counselor, school psychologist
Social adjustment problems	Special educators, counselor
Student's feelings about self	Conferences with student
Family stability and involvement	Teachers, counselor, parents
Cultural/ethnic factors	Counselor, parents
Vocational Readiness	
Prevocational training	Special educator, work study coordinator, school counselor, conferences with student, rehabilitation counselor or other community agency assessment center staff
Existing job skills	
Vocational aptitudes and interests	
Realistic appraisal of self and jobs	

Setting Goals

The retarded vary greatly in ability and personal maturity. Although many retarded persons are able to work competitively with the nonretarded in a wide variety of jobs, they are frequently placed in manual or unskilled positions. It is difficult to predict what to expect of the mildly retarded student in terms of vocational development. Academic performance is often poor and does not necessarily reflect vocational potential, which often proves to be adequate with proper training and placement. Pretraining evaluation is recommended, but can only suggest a student's potential and should not be used in a way that limits vocational growth.

The teacher will want to involve the student as much as possible in setting vocational goals, but it is a good idea to do some preliminary planning in order to show the student clearly defined jobs, tasks, and products to be completed during the course.

Setting Individualized Course Goals

The teacher should begin by studying the regular course in terms of mental retardation and the individual students in the class. Several levels of planning should be considered when setting course goals for mildly retarded students.

- *Job goals.* The teacher should not stereotype the mentally retarded person as a manual or unskilled worker, but should determine in advance what jobs might be appropriate. The student needs a concrete understanding of the job goal. The jobs students train for should be reviewed in terms of the qualities and characteristics of the mildly retarded.
- *Task goals.* The teacher should analyze the jobs chosen according to task competencies required. A particular job should not be excluded because it involves difficult tasks. The retarded student may be able to do them.
- *Subtasks.* Each task should be divided into specific subtasks. The more specific the teacher can be about what the student must do, the more effective the training is likely to be.

In setting training goals for mildly retarded students, the teacher should decide when to emphasize skills that can be generalized to many job situations and when to focus training on particular marketable skills. General skills such as cleanup, care of tools, and safety procedures can and should be taught to all students, along with the idea that these practices are to be followed in every work situation. A good rule of thumb is that the more complex the job, the more specific the training should be. Mildly retarded students usually have difficulty applying skills learned in a particular situation to different job tasks.

Vocational training for retarded students should involve broad work related objectives as well as narrow task oriented goals. These broader goals need not be formulated in detail, but should be concrete and clear to

the student. Talking about being on time is not as effective as demonstrating how to use a time clock. Showing the student where to keep tools is better than telling the student to maintain an orderly work area. As the student becomes a part of a regular class, the teacher should make clear the importance of the ability to work with others, to work alone, to take responsibility, and to accept supervision. The teacher should make each goal as concrete as possible in explaining it to the student.

Performance criteria should be concrete and explicit. In establishing work goals, desirable work habits, and necessary social skills, the student should know how performance will be judged, and exactly what is expected. Vague criteria will lead the student to confusion and affect work performance. Productivity goals may not be meaningful at first, but the student needs to become aware of time as a factor in task performance. A flexible schedule will allow students to proceed at their own pace until they gain skill and confidence.

Planning With the Student

The teacher can establish training goals. However, vocational decisions should involve the student as much as possible so that the student can gain some feeling of control over his or her life and what can be accomplished.

The prospect of learning job skills is exciting, and the mildly retarded student will probably be eager to learn. The teacher's enthusiasm and confidence in the student's ability to learn are very important at this time.

The teacher should review the student's previous vocational experiences and should not worry if the student seems to have a limited awareness of the particular vocational area to be covered. Talking about jobs with the mildly retarded is often ineffective, and the student may need to see and do some job tasks before being able to participate in realistic vocational decisions.

As an initial step in cooperative planning with the student, it is a good idea to demonstrate activities that will be taking place in class and to provide the student with some simple hands on experiences. This gives the student a feeling for what to expect and gives the teacher an opportunity to observe how the student performs in a vocational setting. Goal setting should remain flexible until the teacher gains a better understanding of the student's needs and capabilities.

Review

A mildly retarded student would like to enroll in the regular class this year.

- What kinds of decisions will teacher and special educator have to make regarding (a) job goals, (b) task goals, and (c) performance standards?
- What general skills (safety, cleanup) are essential for the student to learn? What special instruction may be needed?

- How should the teacher plan to involve the student in setting goals?

Taking Advantage of Resources in School and Community

School Resources

School personnel, parents, and other students can assist the teacher in planning and carrying out an individualized training program for the mentally handicapped student.

The special educator is the key resource person for planning and carrying out a training program for mentally handicapped students and can assist the teacher in understanding each student's learning capabilities and in making modifications in the regular curriculum. The special educator should be notified of deficiencies that limit the student's vocational development so that he or she can arrange remedial instruction or other corrective measures.

The student's counselor can be consulted on behavior or adjustment problems and can assist the teacher in understanding the student's academic difficulties. The counselor can explain the student's home situation, which may have a significant effect on vocational development.

The work study coordinator should be acquainted with the student long before actual on the job work experience is scheduled for that student. Mentally handicapped students who are being trained in regular classes should have the benefit of work study because they need the opportunity to work in actual work settings before being placed in a job.

Regular students can be tutors or role models, demonstrating assigned work tasks and expected work habits and behavior. The teacher should encourage a positive relationship among all the students in the class; the mentally handicapped student's learning pace need not be emphasized. Successful participation in a regular school and work environment enables handicapped students to overcome feelings of inferiority and isolation and greatly enhances their chance of achieving their full vocational potential.

Besides human resources, the school may offer instructional aids in the form of audiovisual materials. These are particularly valuable for several reasons. Visual presentation may be more effective than talking or explaining a task to retarded students. Students can review a film or videotape often, practicing until they can do it independently. Films have the advantage of being repetitious when necessary, and can be geared to the student's level of understanding. Cassettes can be used for step by step instruction; they can be played repeatedly by the student, thus providing valuable reinforcement and encouraging the student to become more independent.

Community Resources

Because it is important to show concrete examples and

because the individual's vocational awareness is usually limited, the retarded student can profit from many resources found in the community.

- On field trips to business and industry it is customary to see work being done, to meet employers and other workers, and to begin to develop a concrete understanding of what vocational training is all about.
- Classroom discussions based on information about jobs found in newspapers and magazines are also useful. Discussions should be brief, simple, and to the point.
- Employers in the community may be willing to provide job tryout opportunities early in a student's vocational training. If properly arranged, this can be a positive and motivating experience for the student and can afford the vocational educator an opportunity to observe the student in a real work situation.
- The student may be eligible for department of rehabilitation assistance in pretraining assessment, vocational counseling, and placement.
- Private agencies such as Goodwill Industries and Hope for Retarded Citizens sometimes offer vocational services similar to those provided by the department of rehabilitation. Such agencies can provide a vital link between school and employment, and contact with them greatly enhances a student's vocational future.
- The National Association for Retarded Citizens has an on the job training project. This program offers up to 50% reimbursement to employers for compensation paid during the first 60 hours a student spends in on the job training. Public school students may qualify for this program if they average at least 20 hours a week of on site training.

Table 5.2 lists community and school resources useful in planning instructional programs.

TABLE 5.2: Community and School Resources.

In the School	In the Community
Resource personnel	Field trips to business and industry
Library materials	Newspapers and magazines
Taped instruction	Employers
Slides and filmstrips	Public and private agencies
Videotaped instruction	NARC on the job training project

Work Area

Although extensive changes in physical facilities will not be necessary for the mentally retarded student, the teacher will want to give some consideration to the student's work area, tool storage area, and locker space. The student should have a clearly designated work area. Care of tools and equipment should be included as a part of the instructional program. The retarded student may not pick up incidental information unless it is specifically taught and reinforced, and the teacher should demonstrate and encourage the care of tools and work area. The work area should be simple and uncluttered. A cluttered work area may be confusing to the mildly retarded student, who learns best by working on one problem or project at a time.

Review

- What audiovisual equipment might be useful in training a mildly retarded student? Are such materials and equipment available in the school?
- What community resources would be of value in working with a mentally handicapped student?

Curriculum

The teacher uses the basic curriculum because the mildly retarded student is being prepared to do jobs that are essentially similar to those for which regular students are trained. In modifying the regular curriculum and building individual instructional plans for each student, the teacher should work closely with the special educator responsible for the student's overall educational program. It is important that vocational courses be supported by classes in basic education and general living skills. The retarded student benefits from an integrated program that takes into account the student's level of educational and social development.

It should be kept in mind that:

- Even after careful evaluation, the student's vocational potential is yet to be proven; therefore, flexibility in goal setting, training methods, and evaluation is essential.
- In planning instruction, the teacher should include lessons that will help the student develop problem solving skills; the student needs to learn that a tool can be used for several types of operations and that a process can apply to different situations.
- The program should include lessons on safety emphasizing careful use of power tools, general shop safety, and proper use of safety equipment such as gloves, goggles, and safety boots.

Methodology

By considering the regular curriculum in terms of the learning characteristics of the mentally retarded, the teacher can set up an effective plan of instruction.

Interest and motivation are critical factors in learning. The teacher should try to involve the student in class activity from the beginning. Be sure the student understands what is happening and is becoming familiar with the work area, tools, and other students. In the very beginning, the student needs tasks emphasized that are simple and failproof. If the student has an expectancy to fail, which is common among the mildly retarded, initial success will change things to a more positive direction. If the student appears bored or disinterested, this may be a cover for fear or lack of self confidence. Encouragement and positive reinforcement are essential at all stages of training, and especially at the beginning. Motivational aids such as progress charts and tangible rewards, such as use of new tools and equipment, can increase motivation.

Instruction should be:

- *Organized.* Review the instructional plan. Are the steps of instruction logical? Do they clearly follow each other? Is later instruction based on material already learned?
- *Specific.* The student needs to know exactly what to do and may not be able to see obvious connections unless they are pointed out.
- *Visual.* Whenever possible the teacher should demonstrate what must be done using films, slides, drawings, and simple charts and diagrams as aids.
- *Divided into small steps.* Instruction should be presented in small increments with time for practice.
- *Repeated and checked.* The teacher should check often to see whether the student can demonstrate understanding of each task.
- *Overlearned.* Time should be allowed for overlearning. The teacher should check periodically whether the student remembers important operations and should encourage practice.
- *Reinforced.* The student needs praise for work accomplished, no matter how small the task. It should be clear that new assignments are the result of satisfactory performance. "You've done a good job of soldering these wires; how would you like to begin soldering resistors to terminals?"

As children grow, they learn many things from their environment that assist them in understanding the world, the culture they live in, and themselves. Without conscious effort they pick up facts and ideas from their parents' conversations, movies, TV, and their own observations. This is called incidental learning and is a very significant factor in a child's growth. However, mildly retarded children often miss what is not brought directly to their attention. For this reason, the teacher should plan instruction very systematically and be sure to include everything the student needs to know.

The importance of allowing the mildly retarded student sufficient practice trials cannot be overemphasized. Work with the mildly retarded has shown clearly that while initial performance is well below average, sufficient practice performance of the retarded person's routine tasks is equal to that of many nondisabled persons.

Checklist

Before the training begins, the instructor should take time to ask the following questions:

- How do I feel about working with a mildly retarded student? Do I feel confident that I can help the student to become a part of the class and learn vocational skills?
- Do I have background information I need on the student?
- Have I contacted the special educator who works with the student and have I received help in setting up a plan of instruction?
- Have I reviewed the regular curriculum in terms of this student's special needs and am I satisfied that I have established a workable training plan for carrying out the training?

A positive attitude toward the mildly retarded student is the most important resource a teacher can offer. Patience, confidence, and understanding are necessary parts of the training process.

Review

- What is incidental learning? Why does the teacher need to be aware of the importance of incidental learning when working with mildly retarded students?
- Consider how to modify a course in terms of this statement: Retarded students learn best when instruction is (a) organized, (b) specific, (c) visual, (d) spaced in small steps, (e) repeated and checked, (f) over-learned, (g) reinforced.

Planning for Assessment

The trainee's progress should be closely monitored. The mildly retarded student may not ask for help when instructions are not understood or even after realizing that a task is being performed incorrectly. Regular checks of the student's work progress allow the teacher to give frequent positive feedback and to correct mistakes before they become problems.

Testing

Mildly retarded students do not usually do well on tests. Written tests used for the rest of the class may be beyond their capabilities and should be avoided unless geared to their level. Rather than involve them in formal testing situations, it is a good idea to check their work regularly, keeping a record of progress and problems. Mildly retarded persons do not work well under pressure and tests may be threatening to them. Consequently, test results are often inaccurate measures of actual work competence.

Criterion Referenced Assessment

Assessment measures based on class averages (norma-

tive referenced) are inappropriate because they make a comparison between the retarded students and the non-handicapped classmates. Although handicapped students are being trained in the same occupational area, the job level, competencies to be learned, and time required to master a task may be different from those of the regular students. Criterion referenced assessment, in which the standards for judging the student's work performance are matched with the goals set for that individual in the vocational education program, is much more meaningful.

The following points should also be kept in mind about assessment. First, the teacher should make sure students understand how their work will be evaluated. Second, competencies developed and products completed should be relevant to employers. Third, in the beginning, a flexible schedule should be maintained for work completion and evaluation.

Review

- What changes should be made in assessment procedures for the mildly retarded student?
- What are the drawbacks in using formal tests with retarded students?
- Why are comparisons between the work progress of mentally handicapped students and regular students inappropriate? How can assessment be planned to avoid such comparisons?

CARRYING OUT A PLAN OF INDIVIDUAL INSTRUCTION

Plans for a program of individualized training should include objective measures of proficiency, as well as observational evidence of vocational growth. Both kinds of information are important and both can be used to modify and improve the instructional program.

Objective Measures of Proficiencies

Objective measures of proficiency include checklists of skills mastered, equipment the student can operate, and social competencies demonstrated, as well as progress charts. Good progress records enable the instructor to judge student employability in terms of what employers want and need. Also, checklists can be used to motivate students by enabling them to observe their own progress and encouraging them to maintain that progress.

Observational Evidence of Vocational Growth

The teacher's personal observations are also very important. Often vocational growth can not be measured by hard indicators such as checklists, progress charts, and grades. The teacher may observe progress not indicated on the records. Maturity, judgment, self confidence, and interpersonal skills are difficult to measure but are as important as vocational skills.

Improving Instructor Performance

After instruction begins, the teacher will undoubtedly find areas that were missed in preliminary planning. Questions may arise that can be answered by checking some of the resources earlier in this section. Close cooperation between the vocational educator and others involved in the student's academic and social growth can promote smooth progress.

Once the actual training begins, the teacher will have many opportunities to learn to understand and appreciate the student's abilities and aspirations. As teacher and friend, the instructor can serve as a model for future relationship with an employer. The teacher's personal relationship with the student fosters identification of the latter's individual strengths and weaknesses, and, as instruction progresses, the teacher will be better able to develop a program suited to that person's needs.

Overcoming Instructional Problems

Blocks to progress can occur at any step along the way. In dealing with problems, the teacher can:

- Try to determine the specific nature of the difficulty. A problem can be centered in the goal set, the instructional process, or a student's level of personal maturity.
- Talk the problem over with the student in order to arrive at alternative solutions.
- Consult with other members of the instructional team who specialize in dealing with instructional problems of the handicapped.
- Check the time schedule. The student may not have enough time to master a skill.
- Consider asking for assistance from aides or other students in the class.

Because the mildly retarded student is likely to be less mature personally and socially than his or her nonhandicapped classmates, it may be difficult to separate academic or training difficulties from problems of personal or social adjustment.

Behavior problems can be caused by immaturity, frustration, or a feeling of isolation from the regular class. Such problems may be evidenced by aggressive behavior, withdrawal, refusal to participate, or overdependence on the instructor. While the teacher need not serve as a behavior therapist, these problems do become an instructional responsibility to the extent that they interfere with vocational development.

How can the teacher help the student develop more mature attitudes and behavior, and improve in work readiness?

- Be specific about behavior that interferes with work performance. Some unusual behavior may be tolerated by an employer if it does not interfere with productivity or inconvenience other workers.
- State clearly what behaviors are inappropriate. Write them down and go over them carefully with the student.

- Determine alternative behavior that would improve the student's employability.
- Discuss the problems with the student and explain the importance of changing the behavior. Try to get full cooperation in making desired changes.
- Reward the student for appropriate behavior. Positive reinforcement is a powerful motivator.
- Keep a record of the student's progress and acknowledge even small changes in the desired direction.

Changing behavior is a complex process. The special educator, school psychologist, or counselor can help the teacher plan effective procedures to help the student develop more productive work habits and personal maturity.

Review

- What are the two major indicators of vocational growth? Is it essential to use both types in evaluating a student's work progress?
- What steps are useful in overcoming instructional problems?
- What action can be taken in dealing with a student's behavior problems?

Periodic Review of Progress

The teacher should check the student's vocational and personal progress frequently, involving the student at every stage and making sure the student understands any changes in program or method of instruction.

Modifying the Program

Program modifications can and should occur when the student is either greatly exceeding expected work performance or is falling considerably behind the goals set. Failure at assigned tasks should be avoided whenever possible. It is better for the student to work slowly, learning very small parts of each task well, than to attempt to meet goals that may have been set beyond the student's capabilities. The teacher should become familiar with the student's work pace and abilities and should be ready to make changes in the program when necessary. Program development is a continuous process, and the best program for the mildly retarded student is one that is responsive to changes in work abilities and attitudes.

Documenting Progress

Because program review and modification is continuous, the teacher should keep adequate written records of the student's progress and training. Adequate written records will make it possible for the teacher to communicate clearly with others involved in the student's instructional program.

While it is true that many employers have doubts about hiring mentally handicapped workers, they are generally unaware of the advantages this group can offer

an employer. The mildly retarded often prove to be productive and reliable workers, and there are many kinds of jobs for which they have been successfully trained.

Concern: "Employers just aren't going to place those students in jobs even if I teach the students the necessary skills."

Student placement may be the responsibility of the vocational educator, the work experience coordinator, the school counselor, the vocational rehabilitation worker, or other school or state personnel designated to handle the task. Whatever the official placement responsibilities may be, the vocational educator is in an excellent position to develop and maintain a relationship with employers who will hire handicapped workers. The vocational educator who understands the capabilities and limitations of the mentally handicapped and is familiar with the work competencies of the mildly retarded student has several advantages in dealing with employers. These include:

- Understanding the employer's general needs and specific job requirements.
- Speaking knowledgeably and frankly about the student's work skills and overall work performance.
- Appreciating the position of the employer who is experiencing some doubts about hiring a mentally handicapped worker.
- Being aware of the rights of the handicapped to live and work independently and helping the employer to increase awareness of the rights and potentials of this group.

Review

A job opening that the mildly retarded student in the class could fill successfully has been reported.

- How should the teacher approach the employer about hiring the student?
- What reservations might the employer have about hiring the student?
- How should a teacher respond to the employer's negative feelings in this situation?

STUDY QUESTIONS

Problem 1

After training, how might educable retarded students differ from regular vocational students in:

- The extent and type of directions needed from an employer?
- Awareness of job opportunities and prospects for career development?
- Marketable skills?

Problem 2

How should the instructor approach job (task) analysis with the educable retarded student in mind? The job is stock clerk and the task is taking inventory. In particular, describe how to analyze the job to establish:

- The appropriate levels of detail in the subtasks.
- Whether transfer of skills (generalization from one situation to another) is involved.
- What abstractions (i.e., counting, reading) are involved.

Problem 3

A mentally retarded student in the work study program in hospitality services asks to try cashiering. It is possible the student may make errors in change. What action should be taken regarding:

- What to consider in arriving at a decision.
- What to tell the student.
- What current training adjustments to make, if any.

Problem 4

In trying to place a student in a trial job situation, the teacher finds employers giving a variety of put-off reactions. Indicate what responses would be appropriate if the employer said:

- "If I pay minimum wage, I'll never get my money's worth."
- "The rest of my employees would resent having this person to look after."
- "I don't see how this person could do this kind of work."

SELECTED PUBLICATIONS

Beedy, V. & Others. *A prevocational and social adjustment program for educable retarded adolescents: A pilot project*. Milwaukee Media for Rehabilitation Research Reports, (10). Milwaukee: University of Wisconsin, 1971 (ERIC Document Reproduction Service NO. ED 046 041).

The project report describes a program developed to improve the prevocational competencies of retarded students in educational, social, and vocational areas. A description of activities, vocational and educational adjustment techniques, and parent participation is included.

Birch, J. W. *Mainstreaming educable mentally retarded children in regular classes*. Reston VA: The Council for Exceptional Children, 1974.

Successful mainstreaming programs are described in this book. Detailed are pupil composition, program

qualities, and implementation modes for the following school districts: Tacoma (Washington), Richardson and Plano (Texas), Tucson (Arizona), Louisville (Kentucky), and Kanawha County (West Virginia). Some of the aspects described that are common to all the programs are motivation for mainstreaming, preparation of teachers, inservice teacher education, parental reactions, and costs. Topics include inservice education, teacher preparation, facilities, organization, and parent involvement.

Brolin, D. C. *Vocational preparation of retarded citizens*. Columbus OH: Charles E. Merrill, 1976.

An excellent resource, this book presents techniques and program models for vocational preparation of mentally retarded persons. Part I covers basic background information about mental retardation, the development of a work personality, vocational adjustment of the retarded, and available vocational services (such as educational and rehabilitation programs). Part II presents the basic techniques of vocational preparation. Part III suggests approaches for conducting and evaluating secondary and postsecondary vocational preparation programs. Included in three appendixes is a description of a procedure for conducting a job analysis.

Edgerton, R. *The cloak of competence*. Berkeley CA: University Press, 1967.

This book deals with the importance of the postschool or posttraining period in the career development of retarded persons. In particular, it reveals the occupational problems of persons who have been classified as "mentally retarded" at some time in their life.

Farber, B. *Mental retardation: Its social context and social consequences*. Boston MA: Houghton Mifflin, 1968.

This volume covers mental deficiency in a social context, emphasizing the role of society in perpetuating the dependency and failure of individuals categorized as retarded.

Fraenkel, W. A. *Preparing for work*. Washington DC: The President's Committee on Employment of the Handicapped, n.d.

This resource book contains useful tips on job training and placement, and lists vocational areas and specific jobs that have proven feasible for the retarded.

Gardner, W. I. *Behavior modification in mental retardation*. Chicago IL: Aldine-Atherton, 1971.

The book outlines ways to change inappropriate behavior to increase students' skill acquisition and employability.

Kolstoe, O. P. *Teaching educable mentally retarded children*. New York: Holt, Rinehart, & Winston, 1970.

The author presents methods and materials for specific behavior outcomes in communication skills, arithmetic skills, social competencies, motor skills and recreation, esthetics, and vocational competencies. Suggested units and materials are outlined for primary, intermediate, prevocational, and vocational levels.

RESOURCES

American Association on Mental Deficiency
5101 Wisconsin Avenue, NW
Washington DC 20016

AAMD is a national organization of students, professional workers, and others interested in the study, treatment, and prevention of mental retardation.

Joseph P. Kennedy, Jr. Foundation
1701 K Street, NW
Washington DC 20006

This organization promotes research in the prevention of mental retardation and works to develop programs which improve the quality of life for retarded citizens.

National Association for Retarded Citizens
2709 Avenue "E" East
Arlington TX 76011

A voluntary organization, the National Association includes parents, professional workers, and individuals concerned about mentally retarded people of all ages. The association advances research, treatment, services, facilities, legislation, and broader public understanding of mental retardation. There are more than 1,900 state and local associations.

The President's Committee on Mental Retardation
Washington DC 20201

This committee works to promote awareness of the needs of the mentally retarded. It coordinates the services of concerned agencies and sponsors workshops and forums. The group also serves the President in an advisory role.

UNIT 6

Students with Communication Disorders

Patricia Maloney

The Educator, the Student, and
the Task

Establishing a Plan for
Individual Instruction

Carrying Out a Plan of
Individual Instruction

THE EDUCATOR, THE STUDENT, AND THE TASK

Understanding Students with Hearing Impairments

Hearing impaired individuals are divided commonly into two groups: (a) the deaf, whose sense of hearing is nonfunctional, and (b) the hard of hearing, whose sense of hearing is limited. The *Report of the Ad Hoc Committee to Define Deaf and Hard of Hearing* (1975) defines the two terms as follows:

A *deaf* person is one whose hearing disability precludes successful processing of linguistic information through audition, with or without a hearing aid.

A *hard of hearing* person is one who, generally with the use of a hearing aid, has residual hearing sufficient to enable successful processing of linguistic information through audition. (p. 509)

In its 1976 report to the US Office of Education, the National Advisory Committee on the Handicapped estimated that there are 49,000 school age deaf students and 328,000 hard of hearing students. The difference between the two groups is an important one in terms of how the student learns and responds to instruction. Many people assume that any hearing loss means deafness; they make little or no effort to converse with such handicapped persons. Actually, a person with a moderate hearing loss needs to be encouraged to use residual hearing.

Hearing loss is commonly measured by an audiometer according to international standards. The loss may be *conductive* or *sensory neural*. If it is conductive, a hearing aid to increase the volume of sound will probably be helpful; if sensory neural, the loss is not one of volume of sound but of high frequency ranges, in which case a hearing aid may not be particularly helpful. The classification of hearing loss ranges from slight, in which the person may have difficulty hearing faint or distant speech, to extreme, in which some loud sounds may be heard but the individual relies primarily on vibrations and vision as a means of receiving communication.

It is important to know the degree of hearing loss a student has in order to teach the student effectively. Table 6.1 suggests teaching approaches appropriate to different degrees of hearing loss.

The time of onset of the hearing loss is also important in understanding the student. If a person has acquired speech before the loss of hearing, the whole communication process is likely to be different from that used by persons who have never known speech and language.

A person who has become hearing impaired during childhood or later may have trouble with speech, but at least has some knowledge of spoken language. The person who has been deaf since birth has never heard a spoken word and knowledge of language and speech is severely limited.

The major educational problem of a child who has been deaf since birth is not the lack of hearing itself, but the inability to develop speech and language naturally.

Understanding Students with Speech and Language Disorders

Speech is one of our most personal attributes. Having a speech handicap can be socially embarrassing and humiliating. Knowing that people respond more to the sound of speech than to the content of communication can cause a person to be inhibited or withdraw into a world of silence. The social implications of this handicap are so closely interrelated with the handicap itself that a *speech impairment* is defined as any condition that results in speech that draws unfavorable attention to itself.

The 1976 report of the National Advisory Committee on the Handicapped estimates that there are some 2,293,000 speech impaired persons of school age. Many people think that speech impaired students are not badly off and will eventually grow out of their impairments. Whether a student can overcome a speech impairment depends on the cause of the problem. In any case, speech impaired students will experience failure and frustration in their attempts to communicate. A stutterer who was trying to find a job explained:

Every time I'd ask for a job a funny look would come over their face and some of them would say no right away even before I finished what I was going to say. Some of the others, and one of them was a stutterer too, just waited til I finally got it out and then they would shake their heads. One storekeeper was so sympathetic I could hardly get out of there fast enough. (Van Riper, 1963, p. 42)

Types of Speech Impairment

The main types of speech impairments are articulation disorders, rhythm disorders, voice disorders, and language disorders.

Articulation disorders. These consist of (a) substitution, e.g., *th* for *s*; (b) omissions, the dropping of consonants from the ending, beginning, or middle of words, (c) distortions, often of the sound of *s*; (d) additions, e.g., saying *sumber* for *summer*. About 80% of the cases seen by speech correctionists are articulatory disorders. Baby talk and lisping are common examples of this type of speech impairment.

Rhythm disorders. Normal speech is rhythmic and sequential. When the timing of speech is so far off the standard that it is conspicuous or unpleasant, the speaker is said to have a disorder of rhythm. The most common examples of this are stuttering and cluttering. *Stuttering* is a pattern of speaking broken by excessive prolongations or repetition of sounds, syllables, words, or parts of

TABLE 6.1: The Impact of Hearing Loss in Education.

Hearing Threshold Levels (ISO)	Probable Impact on Communication and Language	Present Day Implications for Educational Settings	
		Type ¹	Probable Need
Level I ² , 26-54 dB	Mild	Full	Most
		Integration	Frequent
		Partial	Frequent
		Integration	Infrequent
Level II, 55-69 dB	Moderate	Self	Infrequent
		Contained	
		Full	Frequent
		Integration	
Level III, 70-89 dB	Severe	Partial	Most
		Integration	Frequent
		Self	Infrequent
		Contained	
Level IV, 90 dB and above	Profound	Full	Infrequent
		Integration	
		Partial	Frequent
		Integration	Most
		Self	Frequent
		Contained	

Note Reprinted with permission from the *American Annals of the Deaf*, 1975, 120(5), p. 510

¹ Full integration means total integration into regular classes for hearing students with special services provided under direction of specialists in educational programs for deaf and hard of hearing. Partial integration means taking all classes in a regular school, some on an integrated basis and some on a self contained basis. Self contained means attending classes exclusively with other deaf and/or hard of hearing classmates in regular schools, special day schools or special residential schools.

² It is assumed that these decibel scores were obtained by a qualified audiologist using an average of scores within the frequency range commonly considered necessary to process linguistic information.

sentences. Self consciousness often accompanies stuttering and makes it more pronounced. Cluttering is a speech disorder characterized by excessive speed, disorganized sentence structure, and slurred sounds. The cluttered speaker may not be aware of having a speech pattern that is difficult to understand or annoying to others.

Voice disorders. Voice disorders, not as common as articulatory disorders, appear mostly in connection with (a) vocal quality, (b) vocal pitch, and (c) vocal loudness. Vocalization can vary in pitch, loudness, flexibility, and quality. The speech produced may be too monotonous, breathy, harsh, or hoarse.

Language disorders. Symbolization, or language disorders, are serious problems in speaking, reading, and writing. The person with such a problem (dysphasia) may have delayed speech, substitute one word for another, or speak in nonsense syllables. The person is aware of not saying what was intended, but is unable to make the right words come out. Students with dysphasia may be incorrectly diagnosed as mentally retarded.

Many students with communication problems have a combination of two or more of these speech disorders.

Causes of Speech Impairment

Multiple speech disorders may result from a number of causes.

Speech deficits associated with brain damage. Cerebral palsy and aphasia are conditions in which brain damage is associated with speech deficits. A student with brain damage may have multiple speech defects.

Speech deficits associated with hearing loss. Studies of speech handicapped students have shown a high correspondence with hearing loss. The speech of a student with a significant hearing impairment may be characterized by several types of defect. First, the pupil may exhibit voice disorders such as speaking loudly or too softly. If severely hard of hearing, the person may pitch the voice high and speak without intonation. Second, the speech may show many errors of articulation: sounds that are unvoiced and are of a high frequency (*s, f, p, t*, and *sh*) are most likely to be misarticulated.

Cleft palate or cleft lip. A structural defect in the palate or roof of the mouth is commonly called a cleft palate. This defect makes it difficult or impossible for the individual to close off the nasal air passage for proper articulation. The speech of a person with an unrepaired cleft palate may be hypernasal as a result of too much air escaping through the nose as the person talks. Cleft lip (incorrectly called "harelip") is a structural defect in the upper lip. It can cause defective speech if left unrepaired.

Review

- Speech is considered impaired when the deviation from typical speech brings unfavorable attention to the speaker. Does this necessarily mean the person cannot be adequately understood?
- Contrast the nature of articulation problems in speech with hearing deficiencies. Which are more apt to limit effective communication?

Capabilities and Limitations

Communication impairment can affect a student's performance in the classroom in a number of ways.

Academic Performance

Language is one of the most complex human skills and most language is acquired through hearing the language spoken by others. There are four main consequences of being excluded from an environment in which language is assimilated through sound: (1) The student's vocabulary probably will be limited; (2) The student's specific language patterns probably will be distorted and/or low level; (3) The student's thinking skills probably will show lack of sophistication; and (4) There probably will be subsequent reading difficulties. Knowledge of the individual student's achieved reading level is important to the vocational educator for planning purposes. The speech impaired student also may have a reading deficit.

Social Skills

Communication impaired students are likely to have underdeveloped social skills. This is not due to lack of potential but to lack of experience in social interaction. Their range of social experience is likely to be much more limited than that of classmates simply because most people rely heavily on oral language in social interaction, whereas the communication impaired student cannot.

Hearing impaired students must rely on other senses to pick up cues that convey meaning. For example, they watch the face of the speaker to assess the emotional content of the message. Students with a severe hearing loss rely heavily on their ability to "read" what people say; they may miss meanings conveyed by tone of voice, inflections, pitch, or volume of voice. If they can speechread they accept what is said literally.

The speech impaired student's difficulty with self expression draws immediate and often unfavorable attention from others. The student may concentrate more on how to say something than on what to say. The speech impaired student may avoid social situations that require speaking, and when asked to speak, may seek ways to avoid it.

Communication Skills

The communication impaired student relies on several means of communication, depending on the impairment. It is important that the educator be familiar with the student's optimum means for communicating.

A hearing aid is often worn by a person with a hearing loss. A hearing aid is a miniature amplifying system that increases the volume of sound to the user's ear. The system begins with a pickup microphone that responds with harmonic physical movement to the sound that strikes it. The movement is changed to electrical variations and the variations are amplified and then translated by loudspeaker components into physical movements that carry to the listener by a custom fitted mold worn in the ear. A hearing aid does not completely eliminate the problems associated with hearing loss and is useful only to the person who can benefit from the amplification of sound. The primary beneficiaries are those persons with conductive hearing loss.

Communication with students wearing hearing aids can be facilitated in three ways:

- The speaker should stand close to the student. Hearing aids have a limited range of pickup.
- Nonauditory cues, such as hand gestures and facial expressions, should be used to emphasize the spoken content of the message.
- Extraneous background noises should be controlled and diminished as much as possible; noise is the archenemy of hearing aid users because the hearing aid amplifies sounds indiscriminately.

In a sensory neural type of loss, the nerve structures of the inner ear have been damaged and sound is usually perceived with less than normal loudness; the sounds are also less clear. Increasing the volume of sound does not help to make the speech less distorted. The person with a sensory neural hearing loss may not be able to discriminate among words like *mass*, *math*, *mat*, and *map*, even with an adequate hearing aid in place.

The greater the hearing loss, the more the student is completely dependent on visual clues. Students with hearing losses might rely on an alternative communication system. These systems include the following.

Speech Reading. Some hearing impaired students can speech read, that is, read lips. The speech reader learns to interpret the facial and lip movements of the speaker to sharpen his or her understanding of what is being said. The student with a moderate hearing impairment

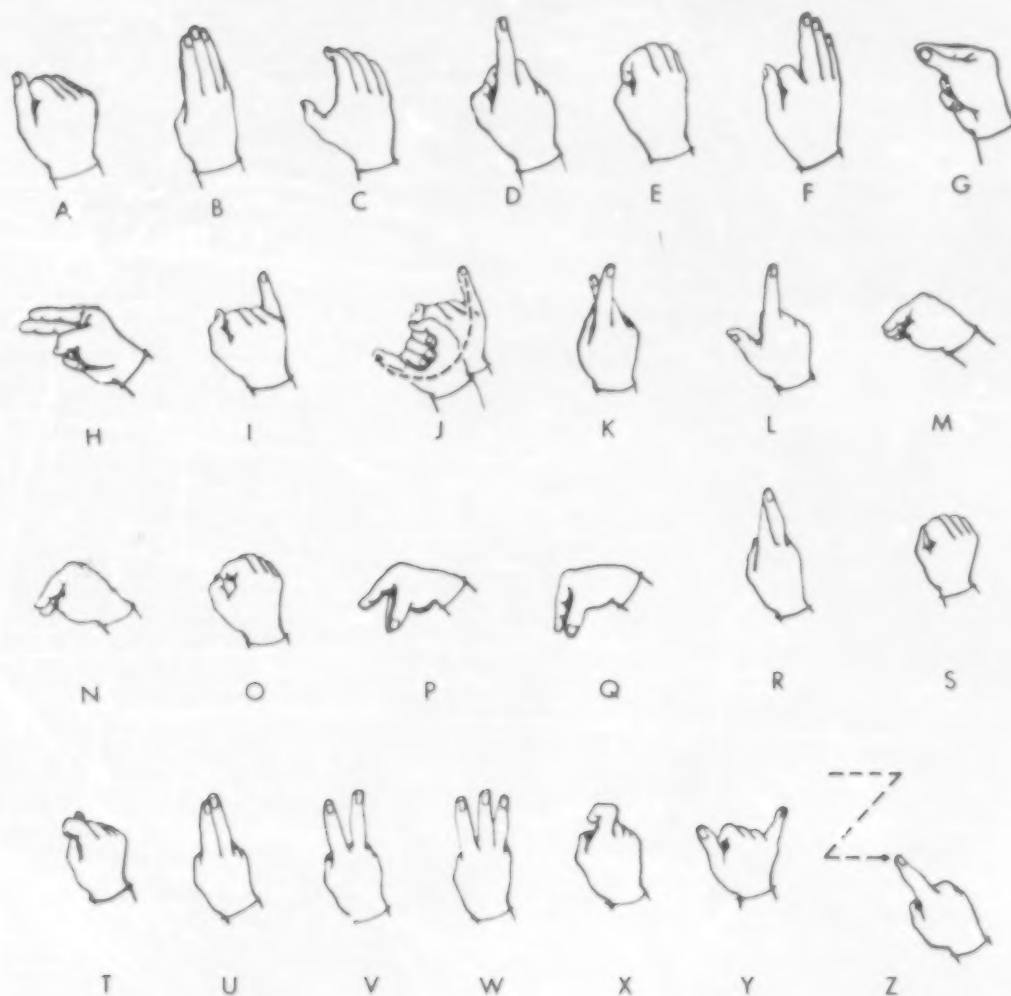
combines auditory clues with speech reading to receive a great deal of information.

The student with a severe hearing loss and minimal auditory input may be forced to rely more heavily on interpreting visual clues given by the speaker, but this student is not necessarily a better speech reader.

Fingerspelling. This system of manual communication uses fixed positions of the hand for each letter of the alphabet. See Figure 6.1.

Sign Language. This type of manual communication consists of formalized movements of the hands, arms, and body to express words and concepts. Fingerspelling and sign language are both used by hearing impaired individuals who rely on manual communication to express themselves.

FIGURE 6.1: The Manual Alphabet. (Reprinted with permission from the National Association for the Deaf.)



Total Communication. Total communication, a designation for the simultaneous use of all available methods, is officially defined by the Conference of Executives of American Schools for the Deaf as follows:

Total Communication is a philosophy requiring the incorporation of appropriate aural, manual, and oral modes of communication in order to ensure effective communication with and among hearing impaired persons. (Brill, 1976, p. 358)

Jobs for the Communication Impaired

The communication impaired student is likely to have aspirations similar to hearing peers. A variety of vocational aptitude tests and inventories can be used to determine the student's vocational potential, but other important information may be obtained by informal counseling. By talking with individual students, the vocational educator can discover how they see their future role in the world of work and can determine their general awareness of jobs. This information is extremely useful in determining realistic vocational goals.

The communication impaired student is capable of performing most jobs, but both teacher and student should keep some limiting considerations in mind.

Foremost in importance is the degree of verbal communication proficiency required by the job. Obviously, a hearing impaired student would not be suited for a job as a switchboard operator, but may be well suited for installing telephones. A speech impaired student may not be able to handle the job of receptionist in a busy office but may be able to type quickly and accurately and keep neat and efficient records in that office. Even though speech impaired or hearing impaired people may not be appropriately placed in a job as a telephone operator, many such handicapped persons can use telephones for personal and for business affairs with special devices available throughout the Bell Telephone System. The ability to communicate verbally that is required in the job and the degree of social skill necessary should be considered. Communication impaired students can hold their own in many but not all social situations.

In considering occupations for the communication impaired, educators should consider:

- The degree of communication skill required by the job.
- The degree of social skill required by the job.
- The fact that within any given vocational area there is a job the communication impaired student is capable of performing.

Considering the Work Task

When planning an instructional program, the teacher should consider the task itself, the student's preferred communication method, the setting for instruction, and

the extent of interaction among students. Vocational educators need to ask the following questions:

- How should the task be communicated? First, consider what method of communication the student uses most? Does the pupil hear most of what is said, only relying on speech reading to fill in the gaps, or is the student deaf and completely dependent on alternative communication systems for information? Can the task be readily explained by visual methods? Is sufficient information about the task available in written form? Are visual aids available?
- Consider the student's ability to communicate. Does the task require a lot of group discussion, or a lot of talking by the student?
- What is the level of the student's social skill? Does the task require a great deal of sophistication in social skill? Does it require much interaction between the communication impaired student and other students? Will it later require interaction with other employees? Will it later require much interaction with the public?
- What language and reading skills does the student have? What is the reading level needed to understand the written material? How much knowledge of the English language is needed? (A student who has been raised using sign language has a totally different concept of language than does the hearing child.)
- What facilities and sounds are used to inform or warn students? The hearing impaired student will not hear them. Are warnings of emergencies made by sound (alarm bells, fire horns)? Are class periods indicated by bells? Do any of the safety devices on the machines use sound to warn of danger?

ESTABLISHING A PLAN FOR INDIVIDUAL INSTRUCTION

In setting up a program of instruction for communication impaired students, the teacher will need to know the students' background. The individualized education program called for in Public Law 94-142 requires that a statement of the student's present levels of performance be included in the written plan.

Gathering Information

In obtaining background information about the student, a vocational educator will need to check these areas:

- *Academic background.* An idea of general schooling can be obtained from the cumulative records of courses taken. Achievement/ability/proficiency test scores and the student's grades provide an idea of academic abilities. For the communication impaired student, perhaps the most important academic information is the student's current reading level.
- *Health background.* A health history can be obtained from attendance and physical health records. The student's developmental history in speech and language skills is available from the speech/hearing specialist's evaluation of the student.

- *Personal and social development.* Knowledge about the family situation—how the family feels about the student and, most important, how the student feels about the family—gives some idea of personal and social development. Self esteem and self concept are perhaps the best indicators of personal and social development. The school counselor can help by describing the student's relationship with other faculty and students.
- *Vocational readiness.* Previous courses, previous work related experience, existing vocational skills, and general work habits and attitudes should give some indication of the student's vocational readiness.

In gathering information, the teacher should start with the students, who are the best source concerning their past experience and their expectations. Other sources include parents, the special education teacher, the speech/hearing specialist, the school counselor, school health personnel, and the work study coordinator (Table 6.2).

TABLE 6.2: Information Sources.

Kind of Information	Source
Personal and social adjustment	Parents
Helpful teaching hints and information on instructional aids	Special education teacher
Practical information about the communication impairment	Speech/hearing specialist, audiologist
Emotional health of the student	School psychologist
Personal interest, aptitudes, and abilities of the student	School counselor
Physical health of the student	
On the job abilities and experience of the student	Work study coordinator

In reviewing the information collected, the teacher should remember that the labels used are only a means of classification. They are not meant to give an overall picture of the person.

Setting Goals

Background information gives some idea of the student's limits and potential and of things to watch for. It provides ideas and suggestions for successful teaching

strategies. The special education teacher can also provide many suggestions useful in planning vocational goals that are appropriate to the individuals involved.

Given the opportunity, the students can indicate vocational preferences, interests, and abilities. Each student's vocational knowledge can be assessed and a determination made of the pupil's awareness of available career options.

Once the main vocational goals and objectives of the student have been established, the educator and the student can begin to define course content (tasks and subtasks) that will build toward the goals. Expected course outcomes should be discussed and interim objectives agreed on. The social skills and maturity needed to reach the vocational goals should be considered.

In short, the vocational educator and the communication impaired student can cooperatively develop a plan to enable the student to take his or her place as a self supporting member of society. The job relevant goals will probably not be different from those for a non-handicapped student, but the means for reaching the goals will vary. The instructional framework used to achieve the goal should be adapted to provide an effective training situation for the communication impaired student.

Considering the Instructional Framework

School Resources

Initially, the educator should become aware of the resources available within the school district. A number of resource personnel should become involved:

- The work experience coordinator can provide information and work out on the job problems, building on the lessons the student has learned in the classroom and smooth the student's transition to the world of work.
- The school counselor handles emotional or behavioral problems, bringing the communication impaired student to a higher level of social adjustment especially in work relevant situations.
- The speech/hearing specialist is familiar with the student's hearing and speaking potential; the educator should check with the specialist on the nature of the communication disorder, the therapy plan, and the attitude of the student toward the handicap.
- The special education teacher can provide academic remedial instruction, information on the handicap, and suggestions for curriculum modification. This teacher already knows the student and may be the most valuable resource person available to the vocational educator.

Working within the context of a well equipped special education resource room, the special education teacher can provide:

- Special instructional materials.
- An "oasis" for the communication impaired student.
- Emotional support in adjusting and coping with the demands on the communication impaired student.

- Checks on the condition of equipment, such as whether new hearing aid batteries are needed.
- Additional academic instruction or special assistance from interpreters or other experts.

Community Resources

Vocational educators should be aware of the resources available within or near their community. A list of these resources can be obtained from the supervisor for the hearing impaired of the nearest department of rehabilitation. The department of rehabilitation offers a number of services to qualified clients. These services include:

- Counseling and guidance, carried out in close coordination with the school.
- Personal adjustment training to help the student function effectively in spite of the handicap.
- Job placement and counseling for employee and employer.
- Vocational testing, when necessary for diagnosis, and other individual rehabilitation services.
- Interpreter services for the deaf—temporary services for special job relevant purposes.

The vocational educator can form important ties to the community by establishing contact with local businesses and private agencies. Such contacts may lead to:

- Field trips to businesses to increase awareness of vocational opportunities.
- Use of the newspaper as a basic source of jobs in the community.
- Short term job tryouts and improved job placement opportunities.
- Specialized assistance from social service agencies or affiliated professional groups such as the American Speech and Hearing Association and the National Association for the Deaf.

Special Materials

A major federally funded project for the handicapped is the Special Materials Project. This project includes circulation of captioned entertainment films for the deaf, captioned educational films for the deaf, instructional materials for special education students, and training and advocacy materials. Most films that are intended for deaf viewers come under the direction of the Captioned Films for the Deaf Distribution Center (CFDDC) in Washington, D.C. Films intended for use with other exceptional individuals come under the direction of the Handicapped Learner Materials Distribution Center (HLMDC) based at Indiana University in Bloomington, Indiana.

Information about materials distributed by either HLMDC or CFDDC is available from

Special Materials Project
5034 Wisconsin Avenue, NW
Washington DC 20016

Special Equipment

The hearing impaired student may not be able to hear class bells, fire alarm signals, and auditory warning signals on machines and equipment or use regular telephones. The following special equipment is available:

- *Warning lights.* A flashing light can be used to indicate danger or emergencies. Substituting lights for bells or buzzers is a simple adaptation improving both the safety and functional performance of the communication impaired worker.
- *Telephone adapters.* Special earpiece attachments are available for use with hearing aids, as are handsets with separate volume controls. A device called Visual Communications (VisCom) has been developed that converts Touch Tone telephone signals into lights on a visual display, thus allowing codelike communication linkages between persons who are totally deaf. For the speech impaired, a device is available that helps those who have diminished use of their vocal cords to amplify their speech. (Information about these adaptive devices is available from a Bell Telephone representative.)

Techniques and equipment modifications are also available to help overcome problems that may arise in job situations. For example, hearing students are taught to recognize and properly set a welding flame by the way it sounds, as well as the way it looks; techniques have been developed to enable deaf students to adjust torch intensity by noting flame color and shape then relating this to the initial position of the adjustment controls—a low cost attachment (\$50) can be mounted to the welding equipment for precision adjustment. Similarly, deaf auto mechanics have learned to tune engines accurately by vibrations of the car body rather than by hearing the car idle.

Hearing and speech are not always necessary in order to perform certain tasks. The vocational educator should take another look at different kinds of jobs to determine which ones the communication impaired might be able to accomplish with special equipment or procedures.

Physical Facilities

One of the most important considerations for the hearing impaired is the quality of lighting in the classroom. This is important because speech reading may be essential. The student's seating position in the classroom should be arranged so that there is a clear view of the teacher's face and of other students' faces. The pupil should be able to see the chalkboard and other display or demonstration materials.

If possible, the classroom noise level should be lowered when instructing the hearing impaired student. This is beneficial to the student and to the class as a whole. Hearing impaired students rely heavily on their residual hearing and their hearing aids amplify all sound. On the

other hand, by turning down the hearing aid volume control, the hearing impaired student may be able to tolerate general shop noise better than most students while work activities are underway. Some speech impaired students also benefit from noise control because their speech may be weak in volume.

Curriculum

The overall school program should provide the communication impaired student with self help skills, improve basic literacy, help in the development of good personal health habits, increase self understanding, and help promote a feeling of having a productive role in society. This requires a coordinated effort by the instructional staff and development of a number of personal, social, and vocational skills.

When planning the vocational curriculum, the teacher should keep in mind the present language and reading level of the communication impaired student. This student may be two or more years behind classmates in reading speed, level of vocabulary, and expressive language. Because the student must rely on written material more than classmates, it is important that materials be selected that the student can easily understand.

Methodology

In teaching, specific techniques can be used to make it easier for the communication impaired student to function successfully in the classroom. They are simple things, not necessarily different from the way one approaches teaching a nonhandicapped student, but they should not be overlooked.

For example, it is important in teaching the deaf or hard of hearing to (a) keep within close range when speaking to the student, and (b) always face the student when speaking.

The teacher should also:

- Check that the student is paying attention (not just "listening").
- Use many visual aids and supplementary written materials.
- Write on the board without speaking, then turn back to the class and speak.
- Articulate clearly and at normal speed.
- Speak in a natural tone of voice.
- Stand still when talking.
- Provide outlines and vocabulary lists for any complicated topic being discussed.
- Rephrase sentences if the student does not seem to understand.
- Seat the student advantageously for group discussions.

What can be done to help speech impaired students participate effectively? In addition to adopting a positive manner the instructor should:

- Look at the student when the student is talking.
- Wait until the student is through talking, rather than

interrupt and try to finish for the pupil.

- Ensure a climate of acceptance without ridicule.
- Encourage speech.
- Make lists of words the pupil has difficulty saying but which are important for the vocational area.
- Control facial expressions and avoid displaying disturbance at the student's speech.

Gaps in communication are bound to occur. Some strategies for compensating for this include:

- *The buddy system.* No matter how bright or diligent, the hearing impaired student will not be able to understand everything that is going on. The handicapped student must often make an extra effort and fatigue alone could affect efficiency. A buddy is a classmate who can help the communication impaired student with directions missed or with what is happening (especially during group discussions).
- *Duplicate notetaking.* A classmate can help the hearing impaired student by making a duplicate copy of the day's notes. This can be accomplished easily with carbon paper. The hearing impaired student can then attend to other visual details and cues that would otherwise be missed. Having an extra copy of the day's notes is a safeguard against the student missing out on the lesson. Duplicate notetaking also increases the interaction between the communication impaired student and other students.
- *Temporary helpers.* Also helpful are tutors, interpreters, and counselors. If these services are needed and the school cannot provide them, special vocational education funds should be requested. If these are unavailable, the department of rehabilitation's local office can be contacted.

Review

- Name at least four specific ways to reduce communication gaps in conveying information to hearing impaired students.
- If a teacher has trouble understanding a speech impaired student, which school personnel might be helpful in discussing the problem and what kind of help might be useful?
- Name two specific ways a classmate can help a hearing impaired student in vocational class.

CARRYING OUT A PLAN OF INDIVIDUAL INSTRUCTION

In carrying out an instructional plan developed for the communication impaired student, the vocational educator should assess progress at regular intervals and watch for potential problems.

Periodic Assessment

The communication impaired student's progress should be monitored several times during the school year. By

observing the pupil's behavior in class, the teacher can learn much about how the student is adjusting, what skills have been mastered, and how the student learns best. Statements about the quality of the student's on the job performance during work experience can suggest improvements in course content. Results of regular class assignments and checklists of skills, tools, and equipment mastered are good indicators of progress.

In assessing the progress of the communication impaired student, criterion referenced measures will provide more meaningful results than will normative referenced measures. The progress a pupil has made toward particular goals and objectives is measured in criterion referenced assessment. The student's progress should not be compared with that of regular students, as is done in normative assessment.

To assess the communication impaired student's progress, the teacher should judge the student on individual merits, not in comparison to the rest of the class.

While assessing the student's performance, the teacher might ask the following questions:

- Is more background information needed?
- Is there a specific unresolved problem?
- Can the educator and the student communicate comfortably with one another?

Overcoming Problems

Unnecessary Dependency

Once they have accepted a communication impaired student, friends and instructors may tend to "spoon feed," or do everything for the person. People do not realize that in giving unnecessary help they impede the development of the communication impaired student. Achieving the greatest possible self reliance should be a major goal for communication impaired students.

The student's only handicap should be the communication impairment, not lowered expectations nor social rejection.

The following are some practical problems in specific areas.

Being Overlooked

It is easy to forget that the hearing impaired student does not hear the daily announcements over the public address system. Announcements should be repeated or written down. This also holds true for class announcements.

Poor Vocabulary

The communication impaired student often has a lower level of vocabulary than that of classmates. The instruc-

tor can help the student to build vocabulary by providing study lists of key words.

Employer Hesitancy

When the student is job hunting, prospective employers must be convinced that the student can do the work and do it efficiently. Some employers are under the mistaken impression that holding a job is a problem for a communication impaired person. The communication impaired are found in all lines of work and have an enviable record in holding jobs for which they are qualified.

Understanding Speech

If the hearing impaired student is having a difficult time adjusting to the class, it might be wise to use an interpreter. The interpreter speaks the language and can be a great help in transmitting course content.

Review

- What principle is important in deciding on assessment procedures to use with the communication impaired student?
- If other students are doing too much of the handicapped student's work, what steps might be taken?
- How might a vocational educator change the attitude of an employer who asks for the names of competent graduates but seems reluctant to consider a qualified handicapped student?

STUDY QUESTIONS

Problem 1

Assume there will be two handicapped students in upholstery class next semester. One is speech impaired—a severe stutterer—and the other is hearing impaired. The vocational educator learns that the deaf student has recently transferred from a school system where deaf students were not mainstreamed with regular students. Neither student has had vocational training and both have led sheltered home lives. Compare the two students in terms of the tentative assumptions the teacher might make about (a) their preferred means of communication, (b) their vocabulary levels and reading levels, and (c) the kinds of adjustments needed in classroom instruction.

Problem 2

A hard of hearing student, who uses a hearing aid with limited benefit, has asked to enroll in the automotive body shop. The teacher is reviewing the job tasks to see which are likely to be difficult but could be accomplished by adaptive instructional techniques. What problems, possible alternatives, and solutions could the teacher anticipate in:

- The student's receiving instructions during class in both classroom and noisy work room?

- The student's communicating with customers in person and on the phone?
- The student's acceptability to a prospective employer in terms of work experience and job placement?

Problem 3

A vocational student in drafting class seems to be doing poorly, much worse than expected from prior scholastic records and has been late with assignments. The teacher would like to establish whether the student is not motivated (much time is spent daydreaming), is lazy (directions are ignored), or has difficulty learning (the student says "What" when called by name). The teacher begins to suspect a hearing loss. What might the teacher do in terms of (a) contacting other school personnel, (b) discussing the situation with the student, and (c) modifying the classroom approach?

SELECTED PUBLICATIONS

Agranowitz, M. R. *Aphasia handbook for adults and children*. Springfield IL: Charles C Thomas, 1976.

This reference work discusses problems of and educational strategies for persons with hearing impairment, speech delay, minimal brain injury, aphasia, cerebral palsy, or mental retardation. Background on the scope of each problem area is given and followed by evaluation methods.

Ainsworth, S. *Stuttering: What it is and what to do about it*. Lincoln NB: Professional Educators Publications, Inc., 1974.

Although written for parents and stutterers, this book is suitable for anyone concerned with stuttering and its management. The book offers a concise overview of the whole range of stuttering therapy. It is a valuable resource for those who seek a better understanding of this communication disorder.

Birch, J. W. *Hearing impaired children in the mainstream*. Reston VA: The Council for Exceptional Children, 1975.

This book is directed mainly to educators working with hearing impaired students in regular classes. It is most useful for those who have not specialized in educating deaf or hard of hearing pupils. The impact of hearing impairment on a child's education and basic communication techniques are explained.

Katz, J. *Handbook of clinical audiology*. Baltimore MD: Williams & Wilkins, 1972.

Made up of 41 papers, this handbook places major emphasis on present procedures and knowledge for basic hearing evaluation, differential diagnostic evaluation, hearing aids, and aural rehabilitation. This is

a good source for information on the current state of clinical audiology.

Massengill, R., Jr., & Phillips, P. P. *Cleft palate and associated speech characteristics*. Lincoln NB: Professional Educators Publications, Inc., 1973.

Serving as a primer on the cleft palate disorder, this book is a helpful resource to the educator. The text contains numerous illustrations and a comprehensive glossary.

Newton, M. *Cerebral palsy: Speech, hearing, and language problems*. Lincoln NB: Professional Educators Publications, Inc., 1976.

This introductory text provides a comprehensive overview of cerebral palsy. Definitions are contained in the text as well as included in a glossary. The book emphasizes the design of specially tailored programs to meet individual needs.

Northcott, W. H. (Ed.). *The hearing impaired child in a regular classroom: Preschool, elementary, and secondary years*. Washington DC: The Alexander Graham Bell Association for the Deaf, Inc., 1973.

This book addresses the hearing impaired student's entry into the regular classroom. Environmental considerations and curricular adjustment are discussed from the perspectives of educators, other concerned professionals, the parents, and the student. The result is a broad outline of policies for successful mainstreaming.

O'Rourke, T. J. *A basic course in manual communication*. Silver Spring MD: National Association of the Deaf, 1973.

Designed for persons concerned with education of the hearing impaired, this text contains a series of 45 lessons with illustrations of 737 signs arranged in a logical, easy to follow sequence. Practice exercises are given for each lesson. The book includes in an appendix, several of the newer signs presently used in school programs (affixes, pronouns, and contractions). A guide to published literature is provided in the annotated bibliography as well as supplementary information on teaching services, media, and additional texts and manuals on this form of communication with the hearing impaired.

Phillips, P. P. *Speech and hearing problems in the classroom*. Lincoln NB: Professional Educators Publications, Inc., 1974.

Designed as a reference book for professional educators, this book provides an introduction of oral communications problems in the classroom. It discusses management of students with speech and hearing disorders and gives helpful background on making refer-

als. An annotated bibliography and glossary are appended to the text.

Schiefelbusch, R. L., & Lloyd, L. L. (Eds.). *Language perspectives—Acquisition, retardation, and intervention*. Baltimore MD: University Park Press, 1974.

Presented in this volume are articles related to language acquisition, and summaries of conference discussions centering on the articles. Moore's article on nonvocal systems of verbal behavior gives an excellent treatment of communication forms. An educator who is looking for a thorough explanation of terms such as oral-aural method, manual English, total communication, and/or Ameslan would find this a rich source.

RESOURCES

Alexander Graham Bell Association for the Deaf
3417 Volta Place, NW
Washington DC 20007

A national organization, the Alexander Graham Bell Association is committed to the promotion of speech and auditory training for hearing impaired children. It is composed of professional workers and other individuals interested in research and training of the deaf. Services of the organization include a biennial convention, newsletter, publications catalog, books and other educational materials. The association also publishes the educational journal, *The Volta Review*.

American Speech and Hearing Association
10801 Rockville Pike
Rockville MD 20852

The American Speech and Hearing Association is a scientific and professional organization. Its purposes are: to encourage basic scientific study of the processes of human communication, with special reference to speech, hearing and language; to promote investigation of disorders of human communication and to foster improvement of clinical procedures with such disorders, and to stimulate the exchange of information among persons and organizations. The association holds an annual convention, and publishes the journals *ASHA*, *Journal of Speech and Hearing Disorders*, and *Journal of Speech and Hearing Research*. In addition, it supplies brochures, bibliographies, career materials, and a publications catalog.

Convention of American Instructors of the Deaf
5034 Wisconsin Ave NW
Washington DC 20016

One of the largest organizations of educators of the deaf in the world, the CAID's membership includes educators from residential, day, private and public schools. It seeks to encourage and facilitate communication about the variety of viewpoints regarding

methods or systems of education of the deaf. Publications include a quarterly newsletter, and the journal *the American Annals of the Deaf*. The organization holds a biennial convention.

Junior National Association of the Deaf
Gallaudet College
Florida Avenue at 7th Street NE
Washington DC 20002

The Junior National Association of the Deaf is the youth section of the National Association of the Deaf, and has chapters in every state. The NAD provides the following services to lay and professional inquirers:

1. Answers inquiries by phone or letter.
2. Refers inquiries to other information centers or direct service providers.
3. Sends brochures, pamphlets, or factsheets.
4. Sends previously prepared bibliographies, abstracts, or indexes.
5. Distributes the association's newsletter.
6. Makes inquiries of other organizations on the inquirer's behalf.

Media Development Project for the Hearing Impaired
The University of Nebraska-Lincoln
Teachers College
318 Barkley Memorial Center
Lincoln NB 68583

The Media Development Project for the Hearing Impaired was established at the University of Nebraska-Lincoln on September 15, 1977. It is a 3 year project which is funded by the Captioned Films and Telecommunications Branch, Division of Media Services, Bureau of Education for the Handicapped. This media development project has had two predecessors at the University of Nebraska, Lincoln, during the past 13 years. The Specialized Office for the Deaf and Hard of Hearing (1974-77) and the Mid West Regional Media Center for the Deaf (1965-1974). Teachers contacting this facility can receive these services: (1) direction to reference lists for instructional materials in specific content areas, (2) a set of media guidelines for using instructional materials effectively with deaf children, and (3) consultant service on the selection and use of instructional materials.

National Association of the Deaf
814 Thayer Avenue
Silver Spring MD 20910

The NAD is a private nonprofit consumer organization dedicated to protecting and defending the rights of deaf people. It recommends and promotes legislation on behalf of deaf people in the areas of rehabilitation, education, interpreter laws, hearing aid regulations, and captioned television. The association encourages and develops leadership skills among deaf individuals and focuses public attention upon their unique needs and achievements. There are 17,000

members, and 45 affiliated state associations. Membership includes deaf and hearing adults, parents of deaf children, organizations of and for the deaf, professionals and students, and other concerned individuals.

Registry of Interpreters for the Deaf
P.O. Box 1339
Washington DC 20013

This nonprofit organization maintains a registry of all interpreters for the deaf in the United States and Canada. Informational brochures are available for interpreting in specific settings such as classrooms, legal and medical areas, religion, and law enforcement. Regional directories are available which list certified interpreters in different geographic areas.

Trace Research and Development Center for the
Severely Communicatively Handicapped

University of Wisconsin-Madison
314 Waisman
1500 Highland Avenue
Madison WI 53706

The Trace Center is a research and development resource center in the area of communication and control for individuals with severe physical handicaps. Although it is involved in some of its own research and development activities, the center is best known for its summary information and workshops which describe the results of research and development being done by researchers and others on a worldwide basis. The Trace Center is funded in part by federal grants, in part by contributions, and in part by reimbursement for services rendered to others. In order to disseminate information, the Trace Center has established an information reprint service and a national series of workshops. For more information, write for "Information Available" or "Workshop Series" packets.

UNIT 7

A Plan for Action

Robert Weisgerber

Introduction

Planning Instruction

Carrying Out the
Instructional Plan

Evaluating Outcomes

INTRODUCTION

In completing this plan for action, it is assumed that the educator either has a particular student in mind or has access to an information file that would be sufficient for making reasonable inferences and judgments about student needs and abilities.

Each section of this unit represents a step in the process, either in the planning of instruction, carrying out the instructional plan, or evaluating the outcomes of instruction. Key elements involved in each step are listed and space is provided for write-in entries that fit the specific situation and the student involved.

PLANNING INSTRUCTION**Knowing About the Handicapped Student**

- A. The student's name (or code number) is _____

The student's disability is called _____

A basic definition is _____

Are there associated problems or disabilities? What are they?

- B. What physical, emotional, or mental characteristics are clearly evident that would limit employability? Could any of these limiting characteristics be modified through training, use of a device, or environmental modifications? (Specify)

- C. What evidence can you find that suggests whether the student copes with his or her handicap effectively and is able to "get things done"?

- D. What are the student's existing interests, demonstrated abilities, and strengths as revealed by prevocational assessment?

- E. What have you learned from the special educator relating to medication, attendance, and procedures to follow if health care is required in the classroom or work station?

Knowing Yourself

- A. Do you usually modify your regular class procedures to accommodate individual differences? If not, why not? If so, what modifications do you make?

- B. Are you worried about the prospect of having a handicapped student in your classroom? If so, discuss your main concerns.

- C. When dealing with the handicapped student, how will you check yourself to be sure that your feelings do not cause an inappropriate reaction (pity, condescension, rejection, etc.) but instead create a favorable learning environment?

- D. Which of your strengths as an instructor will be important to the handicapped student?

Job/Task Analysis

- A. In the current job market, what types of jobs in your occupational area might be open to the trained handicapped student?

- B. Have you prepared a breakdown of the tasks involved in these jobs? Which tasks could the handicapped person do and which would be especially difficult?

- C. Can you give the student any examples of other handicapped persons who have been employed in this type of occupation? (Specify)

- D. Is there a possibility of re-engineering of the job so that the very difficult (inefficiently performed) tasks could be eliminated or reassigned to another person?

- E. After comparing the job tasks to your course of study and class activities, what task level problems do you consider likely? What might you do about them?

Cooperative Goal Setting

- A. After analyzing the job market and the handicapped student's potential, do you think the student needs

vocational counseling? (Specify the type of counseling needed.)

- B. What aspects of the student's prevocational assessment should be shared with the student so that realistic goals can be set?

- C. When setting goals cooperatively, what three persons should cooperate in setting goals? Whom have you involved?

- D. What short term goals have been cooperatively set?

- E. When will you assess whether the short term goals have been accomplished? What performance criteria will you use? How do these criteria differ from the criteria applied to other students?

Needed Course Modifications

- A. In your curriculum, what course content modifications are needed to promote the student's skills development? What information and steps are most important?

- B. What course modifications are needed to increase the student's general understanding of the world of work?

- C. What course content modifications are needed to improve the student's work habits, interpersonal relationships, and personal safety?

- D. What work experiences would be appropriate for this student? (Identify these as specifically as possible.)

Other Needed Modifications

- A. What equipment modifications or additions are important to help the student in assigned tasks?

- B. What facility modifications or additions are appropriate for the student? (Consider access to the class, the classroom itself, the work station, and related facilities such as storage areas.)

- C. What transportation assistance is advisable to enable the student to travel to the class or the work experience location?

Helpful Resources

- A. What special instructional materials might be obtained to help the student master your course? Where can you get them?

- B. What persons should you involve as advisors, interpreters or aides, and teammates for the student? (Consider professional persons, classroom paraprofessionals, parents, and capable vocational students.)

- C. What outside agencies may provide special help or funds? What specific help could be given the student?

CARRYING OUT THE INSTRUCTIONAL PLAN

Student Assessment Following Initial Instructional Period

- A. To what extent did the student reach the goals that were cooperatively set for the initial period?

1. Tasks accomplished on time? _____

2. Performance skills satisfactory? _____

3. Work habits satisfactory? _____

4. Social relationships satisfactory? _____

5. Other goals met? _____

- B. In those areas where the student's progress was unsatisfactory, what goal adjustments should be made for the next period?

- C. In those areas where the student's progress was satisfactory, was the student challenged to reach his or her full potential?

- D. What is the student's self appraisal so far?

Initial Assessment of Yourself and Significant Others

- A. In the initial period of instruction were you able to project a positive, supportive attitude? If not, what prevented it? How can this factor be changed for the next instructional period?

- B. Did you find yourself constantly concerned about the handicapped student or were you able to take the student's individual differences in stride? (Explain)

- C. Did you get the kind of backup help you wanted from others?

1. Special educator _____
2. Classroom interpreter or aide _____
3. Other students _____
4. Administrators _____
5. Other support persons _____

- D. If this student is in a work experience setting, how did the employer and coworkers react to the student?

Revisions of Instructional Strategy

- A. After reviewing the initial instructional period, what goals would you consider appropriate for the student in the remainder of the course?

- B. Based on the results of the initial instructional period, what modifications would be appropriate to meet the needs of the handicapped student during the remainder of the course?

1. In curriculum _____

2. In equipment, facility, transportation _____

3. In materials, resource persons, outside agencies _____

4. In your instructional approach _____

EVALUATING OUTCOMES

Student's Development in Vocational Skills

- A. During the course the handicapped student has developed the following skills, subskills, and levels of performance:

(Example) Skill: decorates baked goods

Subskills: applies icing, rosettes, lettering

Quality of performance: creative, thorough

1. Skill: _____

Subskills: _____

Quality of performance: _____

2. Skill: _____

Subskills: _____

Quality of performance: _____

3. Skill: _____

Subskills: _____

Quality of performance: _____

4. Skill: _____

Subskills: _____

Quality of performance: _____

5. Skill: _____

Subskills: _____

Quality of performance: _____

6. Skill: _____

Subskills: _____

Quality of performance: _____

B. List any skills that need *further development* to increase the student's employment potential. To whom would you refer the student for special help on each of these skills?

STUDENT'S DEVELOPMENT IN WORK ATTITUDES AND HABITS

A. During this course, the handicapped student has developed the following work habits (Examples: Consistently punctual, follows safety precautions):

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

B. During this course, the handicapped student has developed the following work relevant attitudes (Examples: Relates well to others, cooperates willingly):

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

C. List any attitudes and habits that need *further development* to increase the student's employment potential. To whom would you refer the student to help develop these attitudes and habits?

Work Placement Considerations

A. Is there a favorable precedent for placement in this job situation—a previous handicapped employee or trainee, or employer with a favorable viewpoint?

B. How well has the student been trained for the type of work and level of responsibility required at the work situation?

C. Are there problems to be worked out in advance, such as transportation, coworker attitudes, etc.?

- D. What is an appropriate trial period to give the trainee a fair chance without locking the employer in?

- E. What criteria can you and the employer agree on in advance for judging the trainee's performance on the job?

Performance on the job

- A. Job tasks performed at an outstanding level included:

- B. Job tasks performed at an adequate level included:

- C. Job tasks performed at an inadequate level included:

- D. Other appraisals of trainee performance that affect employment potential include:

Overall Assessment of Outcomes

- A. In your opinion, what student benefits or gains have been made as a result of this course?

- B. In the student's opinion, what benefits or gains have been made as a result of this course?

- C. How have you personally gained by this experience?

- D. What is your point of view about future experiences in instructing handicapped students in regular vocational education classes?

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Information Resources

American Vocational Association
2020 N. 14th Street
Arlington VA 22201

A nonprofit organization, the AVA strives to expand and improve vocational education. The 55,000 member association holds workshops and conferences, publishes the *American Vocational Journal* nine times a year, offers several monographs a year, and produces a yearbook. One section of AVA, entitled the National Association of Vocational Education Special Needs Personnel (NAVESNP), serves as a unifying association for all personnel interested in or responsible for learners with special vocational education needs.

Center for Vocational Education
The Ohio State University
1960 Kenny Road
Columbus OH 43210

The Center for Vocational Education is a university based research and development center which focuses on increasing the ability of diverse agencies, institutions, and organizations to solve education problems relating to individual career planning and preparation by:

- Generating knowledge through research (focusing on improving teacher education, special needs groups, career development, management information systems, methods of curriculum deviation).
- Developing educational programs and products (career planning support system, Rural Guidance Program Guidelines, Performance Based Teacher Education units, K-12 career education curriculum units).
- Evaluating individual program needs and outcomes (evaluation, technical assistance, third party evaluations, evaluation handbooks).
- Installing educational programs and products (Alliance of Career and Vocational Education for local schools, national institutes for performance based teacher education).
- Operating information systems and services (ERIC Clearinghouse on Career, Vocational and Adult Education, Resources in Vocational Education, and Resource Exchange System).
- Conducting leadership development and training programs (National Center for Training of Sheet-

metal and Air Conditioning Apprenticeship Instructors, national seminars, and workshops for vocational educators).

The Council for Exceptional Children
1920 Association Drive
Reston VA 22091

The Council for Exceptional Children is a professional association whose purpose is to advance the education of all exceptional children, handicapped and gifted. Although CEC is a membership organization, many of its services are available to any person concerned with special education. CEC's major activities include information services, publications, training, and governmental relations.

The Council provides a comprehensive information center identifying and collecting literature on the education of handicapped and gifted children, much of which is unavailable from commercial sources. CEC periodicals include *Exceptional Children*, CEC's official journal, which emphasizes current issues, research, and trends in special education; *TEACHING Exceptional Children*, which includes information on teaching practices and learning materials; *Exceptional Child Education Resources*, which provides citations of all publications stored in CEC's information system; *Insight*, which provides information on state and federal legislation, programs and services for handicapped and gifted children. Other publications include books, monographs, and nonprint media. The Council provides training institutes which offer intensive study and instruction for developing skills and techniques useful in dealing with exceptional children. CEC's governmental relations unit monitors and coordinates federal, state, and local government actions that influence the education of exceptional children. The unit maintains a comprehensive data bank on state and federal legislation, regulations, and litigation concerning special education. CEC also sponsors regional and international conventions which provide forums for discussion and exchange of information on education of exceptional children.

Educational Resources Information Center (ERIC)

ERIC is a national information system for education, with a network of 16 clearinghouses, each with a dif-

ferent educational focus. Of interest to vocational educators serving the handicapped are two clearinghouses whose scope is provided:

ERIC Clearinghouse in Career Education
The Ohio State University
1960 Kenny Road
Columbus OH 43210

The Eric Clearinghouse on Career Education acquires and processes research reports, curriculum materials, literature reviews, conference papers, evaluation studies, bibliographies and other printed materials relative to:

- Adult and continuing education, extension, nonformal education, nonwork education, permanent education, recurrent education, staff development and training, educational gerontology, community education, community development, experiential education, and veterans education.
- Career education formal and informal from preschool to adult. Encompasses career development materials related to attitudes, aptitudes, interests, values, decision making, self understanding, and occupational information. Includes career awareness, exploration, and orientation; prevocational education; career centers; and experience based career education.
- Vocational and technical education, including agriculture, business and office, distributive, health, home economics, industrial arts, trade and industrial, and new and emerging vocational and technical fields for wide spectrum of high school, post secondary (including vocational and technical education teacher preparation) and adult population: gifted and talented, special needs, prisoners, etc.
- Education and work with related areas of manpower economics and manpower programs; comprehensive employment and training; youth employment and unemployment; school-to-school transition; job placement and follow through; etc. (For a more extensive statement of scope, contact the Career Education Clearinghouse.)

ERIC Clearinghouse on Handicapped and Gifted Children
The Council for Exceptional Children
1920 Association Drive
Reston VA 22091

The Eric Clearinghouse on Handicapped and Gifted Children and Youth collects, processes, and disseminates information on the education of children and youth deemed exceptional: the gifted, the talented, the aurally handicapped, visually handicapped, mentally handicapped (retarded), developmentally disabled, physically handicapped, socially maladjusted, emotionally disturbed, abused/neglected, speech impaired, learning disabled, neurologically handicapped, autistic, culturally different handicapped or gifted, multiply handicapped, and severely handicapped.

Major areas include:

- Behavioral, psychomotor, and communication disorders.
- Cognitive functioning and learning problems of exceptional children.
- Administration of special education programs and services.
- Preparation and continuing education of professional and paraprofessional personnel in special education (including competency based teacher education).
- Preschool learning and development of the exceptional child.
- Statistics and incidence data relating to exceptional children.
- Mainstreaming of exceptional children, more specifically, education in the least restrictive environment.
- Theory, treatment, and prevention of child abuse and neglect.

National Center Educational Media and Materials for the Handicapped (NCEMMH)
Ohio State University
Columbus OH 43210

This Center, formerly a project sponsored by the Bureau of Education for the Handicapped, continues under the auspices and support of The Ohio State University, College of Education. NCEMMH assists special educators and parents with information resource products and services offered through the use of a data base containing over 36,000 abstracts on materials useful in educating exceptional children.

National Instructional Materials Informational System [NIMIS II—(NIMIS/NICSEM)] National Information Center for Special Education Materials
University of Southern California
University Park
Los Angeles CA 90007

Interim services for NIMIS/NICSEM were originated in November of 1977. The facility embodies the informational components of its predecessor NIMIS I. It offers information on media and materials for special education. Computer search capabilities are offered.

Computer based retrieval services were started on the interim systems NIMIS/NICSEM with Bibliographic Retrieval Services, Inc., Scotia, New York, (BRS) (518) 374-5011, in December 1977, and with Lockheed—DIALOG, Palo Alto, California, (415) 493-4411 in January 1978. Access on a demonstration basis can be arranged through the above firms or through the NICSEM information specialist.

Special catalogs based on the NIMIS/NICSEM data base can be obtained through the NIMIS/NICSEM office. Also available is a catalog based on NICEM media base and two newsletters—*Frankly-Speaking* and *The Program Tree*.

Office of Human Development Services
200 Independence Avenue SW
Washington DC 20201

This agency is the principal operating component of HEW responsible for human development and social services. It administers programs to serve children, youth, families, Native Americans, physically and mentally handicapped individuals, and older Americans. This office is responsible for effective policy development and for program management at the federal level.

President's Committee on Employment of the
Handicapped
1111 20th Street NW
Washington DC 20210

This committee comprises 600 leading organizations and individuals involved in the rehabilitation and employment of handicapped people. It works to build a climate of acceptance for handicapped people throughout the United States, and brings agencies and organizations together to deal with problems impeding full opportunity for handicapped people, including such problems as architectural barriers, transportation barriers, civil rights, and preemployment medical exams.

US Office of Education
400 Maryland Avenue SW
Washington DC 20202

An agency of the Department of Health, Education, and Welfare, the Office of Education aids state and local educational agencies by supporting more than 100 separate federal programs aimed at improving the quality of education at all levels. Two bureaus, the Bureau of Occupational and Adult Education and the Bureau of Education for the Handicapped, are of interest to vocational educators teaching the handicapped.

Wisconsin Vocational Studies Center
321 Education Building
Box 49
University of Wisconsin-Madison
Madison WI 53706

This research, development, and service center focuses on the delivery of services including analysis of need, target groups served, institutional organization, instructional and curriculum methodology and content, labor market needs, manpower policy, and other appropriate factors. Of special note is the Center's *A Bibliography of Materials for Handicapped and Special Education*.